The relationship between HIV and AIDS and water scarcity and variability in the Nyamakate area, Zimbabwe: A political ecology approach

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By

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Supervisor: Professor Dianne Scott

Declaration

I declare that this is my own work unaided work, except the acknowledged assistance and referenced citations. It has not been submitted for any previous degree at any university.

Date: May 2014

Signature.....

Name: **Alexio Mbereko**

Dedication

I hereby dedicate my work to my family (father, mother and siblings). Especially, my mother and siblings who are dependent on me; I thank them for their perseverance and contentment to go with barely minimum resources to allow me to pursue my PhD.

"And I gave my heart to seek and search out by wisdom concerning all *things* that are done under heaven: this sore travail hath God given to the sons of man to be exercised therewith."

Ecclesiastes 1 Vs. 13

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List of Acronyms and Abbreviations

AFC	Agricultural Finance Corporation
AIDS	Acquired Immune Deficiency Syndrome
AREX	Agricultural Research Extension Services
ART	Anti-Retroviral Treatment
ARV	Anti-Retroviral
CAMPFIRE	Communal Areas Management Programme for Indigenous Resources
CHG	Commission on HIV and AIDS and Governance
CMB	Cotton Marketing Board
CSO	Central Statistics Office
DA	District Administrator
DDC	District Development Committee
DDF	District Development Fund
DERUDE	The Department of Rural Development
DHS	Demographic and Health Survey
EHT	Environmental Health Technician
ENGO	Environmental Non-Governmental Organisations
ESAP	Economic Structural Adjustment Programme
FGI	Focus Group Interview
FICSRCS	Farm Input Credit Scheme and Resettlement Credit Scheme
GDP	Gross Domestic Product
GIS	Geographical Information Systems
GMB	Grain Marketing Board
GNU	Government of National Unity
GPS	Geographical Positioning System
HIV	Human Immunodeficiency Virus
HRDC	Hurungwe Rural District Council
IMF	International Monetary Fund

IPCC	Intergovernmental Panel on Climate Change
IWRM	Intergrated Water Resources Management
MDC	Movement for Democratic Change
MDG	Millenium Development Goals
MIMS	Multiple Indicator Monitoring Survey
MTP2	Medium Term Plan Two
NAC	National AIDS Council
NGO	Non-Governmental Organisation
NVF	New Variant Famine
OLG	Overlapping Generations Model
OVC	Orphans and Vulnerable Children
PA	Provincial Administrator
PES	Payment for Ecosystem/Environmental Services
SAPES	Southern African Political Economic Series
SSRC	Social Sciences Research Council
STI	Sexually Transmitted Infections
TB	Tuberculosis
TCPL	Total Consumption Poverty Line
UN	United Nations
UNAIDS	United Nations Programme on HIV and AIDS
UNDP	United Nations Development Programme
USAID	United States Agency for International Development
VAC	Vulnerable Assessment Committee
VIDCO	Village Development Committee
WADCO	Ward Development Committee
WB	World Bank
WBWS	Willing Buyer Willing Seller
WHO	World Health Organisation
ZANU PF	Zimbabwe African National Union – Patriotic Front

ZHDR	Zimbabwe Human Development Report
ZIMPREST	Zimbabwe Programme for Economic and Social Transformation
ZINWA	Zimbabwe National Water Authority

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Abstract

There is a dearth of knowledge on how water scarcity and variability and HIV and AIDS concurrently impact on rural people's livelihoods. Hence, this research seeks to understand the experiences, responses to, and interpretation of, the Nyamakate households to the complex relationship between HIV and AIDS and water scarcity and variability on their livelihoods and social well-being in the context of political and economic crisis in Zimbabwe.

The research was conceptualised within a post-structuralist political ecology framework. The study was carried out in the Nyamakate resettlement area, Zimbabwe. The study adopts a qualitative methodology, as it was deemed to be the best in understanding lived experiences and realities constructed by the social actors. The study conducted semi-structured interviews with: 40 households; 10 key community informants; 3 key stakeholder and 8 focus group interviews. The study also makes use of geographical information systems in mapping out households and the water points.

The preliminary results of the study indicate that no one is denied access to water resources in the Nyamakate area. All the respondents indicate that water resources in the Nyamakate area were declining hence complicating access to water. HIV and AIDS affected households had problems accessing water since much of their time was spent in caregiving. In the upland area, people had to travel long distances to fetch water which was a major problem to HIV and AIDS affected households who had to travel at night when the patient is asleep and other family members can help in caregiving. Some community members dislike people to wash linen used by an HIV and AIDS affected person at the water point.

As a coping mechanism to water scarcity, the people have set up water point committees that regulate water access and utilisation. The committees levy the community for any repair to water points (boreholes and wells) and this adds to the financial burden of HIV affected households. The Nyamakate community receives help from one non-governmental organisation which provides food to people on anti-retroviral program. Communities were asked by Mvura/Manzi Trust to dig wells (on a once-off basis) and the Trust provided cement to protect the wells. Some of the wells dug were dry due to poor siting by the community members, who used traditional methods of surveying for the water. The local council has provided the communities with borehole parts, but the communities have to transport these on their own. The council cannot provide adequate services to the community because it does not have the funds.

In conclusion, HIV complicates the ability of households to access water in Nyamakate and this has potential to exacerbate other opportunistic diseases, especially diarrheal diseases. Furthermore, water scarcity in the lowland is mainly a result of infrastructural problems.

Chapter 1: Introduction

1.1 Introduction

The plethora of problems confronting the rural population in sub-Saharan Africa defies a simple causal analysis, which usually fails to capture the multiple hardships experienced by households in their interactions within their environmental and social contexts. The multiple hardships place stress on the household in different ways, rendering them vulnerable to risks. Risk is defined here as the combination of people's exposure to a hazard and their social vulnerability (i.e., their capacity to anticipate, respond to, and recover from damage) (Blaikie, 2008; Collins, 2008). This definition serves well as it provides an understanding of vulnerability as a result of the hazard and the failure of the political and economic structures to mitigate the perturbation from a disaster. It is contended that forms of power operating at the material or discursive level shape the social actor's access to resources differently and condition their vulnerability to hazards (Collins, 2008). The literature identifies two stressors, namely, HIV[1]and AIDS[2], and water scarcity and variability[3], which are documented as the main stressors confronting rural communities in sub-Saharan Africa (Obi, *et al.,* 2006; Hunter, 2007; Ngwenya and Kgathi, 2007; Ngwenya and Mosepele, 2007; King, 2012a). In sub-Saharan Africa, few localised studies exist on the household's experiences of HIV and AIDS and water scarcity and variability and there is a need to conduct such a study in the Zimbabwean context.

Studies on the impacts of HIV and AIDS, and water scarcity and variability amongst rural populations in Africa and elsewhere have been largely conducted separately (Butler, *et al.,* 2006; King, 2010). Hence, these two stressors have been presented as unrelated yet in reality rural populations experience them concurrently (Butler *et al.* 2006). It is further proposed

[1] Human Immunodeficiency Virus
[2] Acquired Immunodeficiency Syndrome
[3] Water scarcity is defined by shortfall between the gross amount of water available to a country/community from the global water cycle and the amount that is demanded to meet productive and domestic needs. Water variability refers to the interannual fluctuation of precipitation which results in large scale social problems (Falenmark, 1989). Climate change is impacting on various natural resources including water and resulting in water scarcity and variability in Zimbabwe (Ngoma, 2008; Magadza, 2010). Hence, the terms water scarcity and variability are used in this thesis as it is assumed that water scarcity and variability are induced by climate change and technical failures.

here that the impacts of these two stressors and the ability of the people to cope with them are informed by their structural context (Barnett and Blaikie, 1992; King, 2010). People within different structural contexts will experience the impacts of these stressors in different ways. Rural households in Zimbabwe are experiencing the effects of HIV and AIDS within the context of severe political and economic problems (Addison and Laakso, 2003; Scarnecchia, 2006, Peters, *et al.,* 2008). More specifically, the research presented here examines the Nyamakate households' experience of water scarcity and variability among HIV and AIDS affected households within the Zimbabwean context. The Nyamakate community is a resettlement area created in the early 1980s. The Nyamakate community has a high prevalence of HIV and AIDS as it is located on the Harare Chirundu trucking corridor. Furthermore, there is reason to believe that the water resource is being negatively affected by climate change as it lies in the Zambezi valley, which is reported to be bearing the impact of climate change (Magadza, 2010).

Only a handful of studies have been found which examine the relationship between the natural environment and health epidemics in Sub-Saharan Africa (Oppong and Kalipeni, 2005; Richmond et al., 2005; Sultana, 2006; Cutchin, 2007; Baer and Singer, 2008; Hanchette, 2008; King, 2010). Until recently, human and environmental studies have been pursued separately (Aggarwal, 2006). This thesis adopts Forsyth's (2003) argument that environmental issues and politics are interrelated and should be viewed as co-produced. He argues that in reality humans and the environment have a dialectical interaction and this informs the reality constructed and experienced by human agents. Due to the dearth of literature on the relationship between water scarcity and variability, and HIV and AIDS, the theorisation of this relationship is in its infancy. The thesis utilises post-structuralist political ecology theory to contribute to the conceptualisation of the relationship between water scarcity and variability, and HIV and AIDS. Post-structural political ecology is a theory that seeks to examine discourses and constructed knowledge and experiences of the human-environment interactions by social actors in the context of macro political and economic institutions (from the global level to the household level) (Neumann, 2005; Biersack, 2006, Forsyth, 2008). This meta-theoretical approach has the ability to analyse multilevel economic and political conditions in relation to the experiences constructed by human agents in order to understand the interaction of HIV and AIDS and water scarcity and variability at the household level (Curtis and Riva, 2009). In examining the relationship between HIV and

AIDS and water scarcity and variability, this thesis contributes to the body of literature in post-structural political ecology.

Beyond doubt, water is essential for human survival, thus water scarcity and variability can have detrimental effects on humanity and the natural environment. Studies show that by 2025, about 2.7 billion of people will face water scarcity and variability throughout the world (UN, 2003). It is furthermore estimated that the per capita supply of water will decrease by one-third while the water demand will increase by 50 % in the same period (UN, 2003; Mehta, 2006). Water scarcity threatens about 52% of the world's poor population who stay in arid and semi-arid areas (Lopez-Gunn and Lamas, 2008). Most of these people rely on rain as a primary water source and cannot invest in infrastructure because of high poverty levels.

People living with HIV and AIDS will have an increased demand for safe water in order to maintain good levels of hygiene and healthy eating. Portable water is important for a number of reasons: reduction in waterborne pathogens; domestic uses; taking medication; HIV positive infant feeding; human right; a populations' access to water can be used as a development index; and productive activities (Obi *et al,* 2006). Access to reliable and safe water and sanitation mitigate some impacts of HIV and improves the quality of life of the HIV infected person (WSP 2007). People living with HIV and AIDS are more susceptible[4] to other diseases because their immunity is compromised (Nkongo and Kgathi, 2005; Obi *et al,* 2006; WSP, 2007). Thus, the quality, quantity and availability of water is important for maintaining high standards of care and health in an HIV and AIDS affected household.

According to World Health Organisation[5] (WHO) (2009) water scarcity presents problems in the following ten different ways. Firstly, water scarcity occurs even in areas where there is plenty of rainfall or freshwater. How water is conserved, used and distributed in communities and the quality of the water available can determine if there is enough to meet the demands of households, farms, industry and the environment. Secondly, water scarcity affects one in

[4] Susceptibility would mean likelyhood to be explosed and contract the HIV.
[5] http://www.who.int/features/factfiles/water/water_facts/en/index.html [Accessed 20/11/2011]

three people on every continent of the globe. The situation is getting worse as needs for water rise along with population growth, urbanisation and increases in household and industrial uses. Thirdly, almost one fifth of the world's population (about 1.2 billion people) live in areas where the water is physically scarce. One quarter of the global population also live in developing countries that face water shortages due to a lack of infrastructure to access water from rivers and aquifers. Fourthly, water scarcity forces people to rely on unsafe sources of drinking water. It also means they cannot bath or clean their clothes or homes properly. Fifthly, poor water quality can increase the risk of diseases such as diarrhoea, cholera, typhoid fever and dysentery, and other water-borne infections. Water scarcity can lead to diseases such as trachoma, plague and typhus. Sixthly, water scarcity encourages people to store water in their homes. This can increase the risk of household water contamination and a provide breeding ground for mosquitoes, which are carriers of dengue fever, malaria and other diseases. Seventh, water scarcity underscores the need for better water management. Good water management also reduces breeding sites for such insects as mosquitoes that can transmit diseases and prevents the spread of water-borne infections such as schistosomiasis, a severe illness. Eighthly, a lack of water has driven up the use of wastewater for agricultural production in poor urban and rural communities. More than 10% of people worldwide consume foods irrigated by wastewater that can contain chemicals or disease-causing organisms. Ninthly, Millennium Development Goal number seven, target ten, aims by 2010 to halve the proportion of people without sustainable access to safe drinking water and basic sanitation. Water scarcity could threaten progress to reach this target. Tenthly, water scarcity is a critical problem as water is an essential resource to sustain life.

In this overview, the WHO identifies the link between water resources and waterborne diseases but omits the problems faced by HIV and AIDS affected households in the face of water scarcity and variability. Yet, AIDS affected households are vulnerable to the impacts of water scarcity and variability. In an effort to deal with these impacts, AIDS households are forced to make decisions involving trade-offs that are unsustainable in the future (Rugalema, 2000; Drimie and Casale, 2008). On the other hand, some studies have shown that the vulnerable households are rendered susceptible to HIV as they adopt coping strategies that expose them to contracting HIV or by having high chances of contracting the virus (Drimie and Gillespie, 2010).

HIV and AIDS have had a marked impact in sub-Saharan Africa, the region which accounts for the heaviest global burden of the virus. The first incidence of Human Immunodeficiency Virus (HIV) in sub-Saharan Africa was diagnosed in the early 1980s (Barnett and Blaikie, 1992; ZHDR, 2003). The disease quickly spread, and it reached pandemic levels within a short period. By 2000, the global estimate of people living with HIV was estimated at 36.1 million of which 70% were in sub-Saharan Africa (Morris, 2001; UNAIDS, 2013). By 2011, the global estimate of people living with HIV had declined to 34.0 million (UNAIDS, 2012). The pandemic is showing signs of slowing down as evidenced by the 20% decline of new infections by 2011 from 2001 (Government of Zimbabwe, 2012; UNAIDS, 2012). In 2007, the average adult prevalence[6] rate for HIV positive was 18% for nine countries in southern Africa (South Africa [the highest prevalence], Swaziland, Lesotho, Zimbabwe, Botswana, Mozambique, Namibia, Zambia and Malawi [lowest prevalence]) (Sawers and Stillwaggon, 2010). By 2010, the UNAIDS report indicated that countries within Southern Africa still have the highest sero-prevalence[7] rates globally, but the rankings had changed; Swaziland is the highest, followed by Botswana, then Lesotho and South Africa (UNAIDS, 2010). Zimbabwe's HIV prevalence was at 13.1% in 2011 and showing signs of decreasing (Government of Zimbabwe, 2012; UNAIDS, 2012).

The first cases of HIV positive people in Zimbabwe were reported in the mid-1980s. HIV screening of donated blood by the national Blood Transfusion Services (BTS) indicated that HIV prevalence was 2% to 3% in the mid-1980s (Zimbabwe Human Development Report (ZHDR, 2003). After the first incidences of HIV in Zimbabwe, the pandemic reached its peak in 1997/1998 with a sero-prevalence of 29.3% (WHO, 2008). The epidemiological data shows that HIV sero-prevalence is declining amongst the adult population in Zimbabwe. Prevalence in the adult population in Zimbabwe was estimated to be 23.7% in 2001, and to have declined to 18.4% in 2005, and 14.3% in 2009 (Government of Zimbabwe, 2010). Antenatal data has also reinforced the authenticity of the decline in HIV incidence, with antenatal prevalence decreasing from 25.8% in 2002, to 21.3% in 2004, 17.7% in 2006 and to

[6] The rate at which a certain disease occurs, hence this will be the number of new HIV sero-positive cases occurring during a certain period in a population at risk (Wu, *et al*., 2003).

[7]Sero-prevalence is the frequency of individuals in a population that have a particular element (as antibodies to HIV) in their blood serum (Mishra, *et al.,* 2009). In this study the word sero-prevalence and prevalence are used interchangeably to describe the frequency or incidents of HIV and AIDS in a particular geographical space.

16.1% in 2009 among females aged 15 to 49 years (Ministry of Health and Child Welfare, 2004; Mahomva, *et al.;* 2004, Lopman, *et al.,* 2008).

The relationship of HIV and AIDS and water scarcity and variability is complex as each one of these stressors affects the other. There is concern amongst academics, policy makers and development practitioners over the issue of water scarcity. Climate change has been held responsible for the water scarcity and variability that is currently being faced by communities in the southern hemisphere (Ngoma, 2008, Magadza, 2010). Projections show that by 2025, approximately 480 million people in Africa could be living in water stressed areas (Bates, *et al.,* 2008). It was further estimated that more than 25% of the African population were experiencing water stress (Ludi, 2009). Zimbabwe's water resources are becoming increasingly scarce. The 2002 census found out that about 80% of the people in Mashonaland West province had access to safe drinking water (i.e., piped water and water from borehole) (CSO, 2002). Thus, 20% of the population relied on unsafe drinking water sources such as open and shallow wells and river water. However, statistics underplay water scarcity and variability within the rural areas. If census data was disaggregated by rural and urban areas, it would show that there are lower levels of access in rural areas (CSO, 2002). Thus, the application of qualitative methodologies would assist in understanding the experiences of rural communities in relation to water scarcity and variability because these methodologies engaged with social actors than the quantitative survey undertaken by the Central Statistics Office (CSO) (Kitchin and Tate, 2000). Research on climate change that focuses on water scarcity tends to focus more on conceptualising coping and adaptation strategies (Cutter, *et al.,* 2009). In the process, it ignores the multiple stressors that inform the coping and adaptation mechanisms of communities in dealing with the problems associated with climate change, specifically water scarcity and variability.

Climate change is predicted to lead to the creation of conditions which are conducive for disease-causing organisms to thrive, such as mosquitoes and schistosomiasis. Hence, the natural science literature focuses on the role water plays in hosting or promoting organisms that cause ill-health (McMichael, *et al.,* 2006; Zhou, *et al.,* 2008; Lafferty, 2009; Bhasin and Nag, 2011). Yet, the relationship between water and health can be very complex especially with reference to HIV and AIDS. There is a paucity of literature which interrogates the

relationship between water scarcity and variability and HIV and AIDS. HIV and AIDS and water scarcity and variability have both had significant impacts on Sub-Saharan Africa, especially in the rural areas. HIV and AIDS and water scarcity and variability directly affect agriculture, and rural communities primarily depend on agriculture for their livelihoods (Drimie, 2003; Hunter, *et al.,* 2009; Manase, *et al.,* 2009). This thesis contends that understanding the relationship between HIV and AIDS and water resource and variability is important in promoting sustainable rural development within the sub-Saharan Africa region and informing rural development policies.

We can infer is that drought, lack of investment, and various political/economic crises exacerbate the effects of HIV and increased water scarcity and variability. With high HIV prevalence it is necessary to position the individual and the household experience of AIDS in the wider social, political and economic policy context (Peters, *et al.,* 2008). A number of scholars have described the Zimbabwean political economy as being in a state of crisis (Sachikonye, 2002; Scarnecchia, 2006; Raftopoulos, 2006). Since 1999, the country has been experiencing high inflation, high unemployment, food insecurity and reduced government investment in social services (Sachikonye, 2002). Additionally, the country has been characterised by authoritarian government, international isolation, human rights abuses and political instability (Raftopoulos, 2006). The political and economic crises are affecting the country and this is translated into a social crisis (Scarnecchia, 2006). The crises are impacting rural more than urban populations. This is in part due to their over reliance on agriculture, political and economic marginalisation, widespread poverty, reliance on a deteriorating natural resource base and the impact of HIV and AIDS (De Waal and Whiteside, 2003). The Nyamakate community is also being impacted by the structural crises being experienced in Zimbabwe. More so, resettlements like the Nyamakate community are affected by frequent droughts, low infrastructural development and low social capital (Barr, 2004). These factors inform how the households experience the impacts of HIV and AIDS and water scarcity and variability. This study will use a post-structural political ecology framework in understanding the experiences of the Nyamakate households when ity comes to the impacts of HIV and AIDS and water scarcity and variability in the context of the crises confronting Zimbabwe.

1.2 Statement of the Problem

Changes in natural resource use, such as the use of water, reflect both the structural demands of the national, regional and international political economy and local interactions between communities and their natural environments (Bell and Roberts, 1991; Robbins, 2004). Scholarship within political ecology is sensitive to the interplay of diverse socio-political forces at different scales, including gender and class power dynamics and how these forces relate to environmental change (Bryant, 1992). The study explores the national and international policies and discourses that influence the way in which local actors position themselves in the complex relationship between HIV and AIDS and water scarcity and variability. Therefore, the economic and political crisis in Zimbabwe provides a structural context within which households at the local level experience, interpret and respond to the interplay between HIV and AIDS and water scarcity and variability. Since 1996, Zimbabwe has been characterised by a declining economy a collapse of the democratic process, failure of the rule of law; dearth in human capital, poverty in excess of 80 %, poor socio-economic policies, shortage of agricultural inputs and hyperinflation (Sachikonye, 2002; Scarnecchia, 2006; Tarisayi, 2009). Zimbabwe has recorded the second highest inflation rate in the world, with the July 2007 Figure standing at 231 million % (Tarisayi 2009). This structural crisis and the failure of socio-economic policies have driven poor people, particularly in rural areas, to over-exploit natural resources (Blaikie and Brookfield, 1987).

Depletion of natural resources, including water, coupled with the prevalence of HIV and AIDS is reshaping the lives of community members and posing a serious threat to the maintenance of sustainable livelihoods for the rural population in southern Africa (Butler, *et al.,* 2006). Livelihoods of rural populations are dependent on the utilisation of natural resources (Ashton and Ramasar, 2002). The literature reviewed for this study reveals that there are two large bodies of literature which focus on the impacts of HIV and AIDS and the effect of natural resources depletion on rural households, in this case water scarcity and variability. The problem of the impact of HIV and AIDS on different institutions in society is the focus of numerous research projects and intervention programmes (Haddad, 2001; Oni, *et al*., 2002; Barnet and Grellier, 2003; Topouzis, 2003; Davis, 2010). Studies on HIV and

AIDS have also explored coping strategies being employed by households in response to the pandemic (Haddad, 2001).

This research, however, also focuses on water resources as an important form of natural capital in rural areas. Literature in development studies has focused on access to water resources because it is such an important resource for livelihoods and socio-economic development, particularly in rural areas (Obi, *et al.,* 2006). Regrettably, water resources in sub-Saharan Africa are declining in the face of climate change and human over exploitation (Aggarwal, 2006; Mano, *et al*., 2006; Gbetibouo, *et al*., 2009; O'Brien, *et al*., 2009; Magadza, 2010). Considerable research has also been undertaken on the depletion of water resources, focusing on both the quality and quantity of these resources in the Zambezi basin (Mhlanga, *et al.,* 2006; Magadza, 2010; Ndebele-Murisa, 2010). Literature shows that access to water resources is often highly contested in Zimbabwe and this has been exacerbated by the decline in water resources and the crisis in Zimbabwe (Scoones and Cousins, 1991; Mbereko, *et al.,* 2007). The thesis will examine the relationship between declining water resources (water scarcity and variability) and water variability and HIV and AIDS in affected households in the structural context of post-independence Zimbabwe.

Literature reveals that HIV and AIDS affected households have been reported to lose both their physical and natural assets in attempting to cope with illness or death of a household member (Rugalema, 2000; Goudge, 2007; Masanjala, 2007; Ansell, 2009; Davis, 2010). The lost assets, knowledge and labour force, which are part of the household's resource will compromise the household's ability to benefit from the natural resource, base which is accessed competitively. There is therefore reason to argue that HIV and AIDS and the concomitant lack of access to natural resources combine to create susceptibility and vulnerability in HIV and AIDS affected households respectively (Hunter, *et al.,* 2009). The relationship between water scarcity and variability and access to water resources and HIV and AIDS in rural settings is very complex and poorly understood (Butler and Oluoch-Kosura, 2006). It is the goal of this research to gain a deeper understanding into these intricate relationships between water scarcity and variability and HIV and AIDS within the structural context in Zimbabwe.

Of importance in achieving this goal is the growing body of knowledge investigating the linkages between natural resources and HIV and AIDS (Holloway, 2003; Drimie, 2004; Drimie, *et al.*, 2009; Hunter, *et al.,* 2009; O'Brien, *et al*., 2009). Although most of this work has been concentrated in southern Africa (South Africa, Malawi, Zambia and Botswana), none has been undertaken in Zimbabwe. Furthermore, these studies do not consider the influence of the structural context on the relationship between HIV and AIDS and water scarcity and variability within households as is intended here.

This study will be conducted in the Nyamakate resettlement area in northern Zimbabwe. The Nyamakate area has an HIV sero-prevalence of approximately 13% (Ministry of Health official, pers. comm., 7/2011). Natural resource access, particularly to water, in the Nyamakate area is highly contested. This is a typical scenario amongst farmers resettled during the first phase (1980-1990) of the land reform programme in Zimbabwe (Kinsey, 1999, Moyo, *et al.,* 2000). The case of Zimbabwe is unique in Africa because the effects of HIV and AIDS and natural resource depletion are greatly exacerbated by the political and economic problems facing the country. The impact of the complex set of relations between HIV and AIDS linked with resource depletion in this structural context is compromising the ability of households to survive. The main motivation is to understand these linkages and inter-relationships and how they are forged in the structural conditions of political and economic crises in Zimbabwe. Hence the motivation to adopt a meta-theoretical framework of political ecology, as it allows for interrogation of local problems in relation to structural forces operating at the national and global level.

This study proposes undertaking a qualitative analysis of the Nyamakate households to understand their experiences, responses to, and interpretations of, the impact of HIV and AIDS in the face of declining and differential access to water resources. The study will use the political ecology framework to understand the structural factors influencing household resilience in the context of impacts of HIV and AIDS and water scarcity and variability. This study aims to contribute theoretical insights into the dynamic relations between households and water scarcity and variability at the local level and the vertical relations from the micro to the macro level. Drimie and Casale (2009) noted that the weakness of current livelihood interventions in African rural settings lies in the poor understanding of the interaction of HIV

and AIDS and access to environmental resources at the household level. In addition to the theoretical contribution to political ecology, a significant applied contribution of this study is that it will contribute to the understanding of current weaknesses in interventions to support rural households and offer possible solutions within the specific context of rural communities in Zimbabwe.

1.3 Research Question

How do the households of the Nyamakate area experience, respond to, and interpret the complex relationship between the impacts of HIV and AIDS, and water scarcity and variability and its impacts on their livelihoods and social well-being in the context of the political and economic crisis in Zimbabwe?

1.4 General Objective

To analyse the experiences, responses to, and interpretations of, the Nyamakate households in relation to the complex relationship between HIV and AIDS and water scarcity and variability on their livelihoods and social well-being in the context of political and economic crisis in Zimbabwe.

1.4.1 Specific Objectives

1. To analyse household experiences, responses to, and interpretations of the impacts of HIV and AIDS on the households and community.

2. To analyse household experiences, responses to, and interpretation of the impacts of water scarcity and variability on livelihoods and social well-being.

3. To explore and analyse changes in power relations that inform patterns of access and usufruct rights to water resources.

4. To explore and analyse the support rendered to the Nyamakate community by civil and public institutions in the context of HIV and AIDS, water scarcity and variability.

5. To describe the historical, political and economic institutions responsible for shaping the current experience and response to HIV and AIDS and water scarcity and variability.

6. To explore the relationship between HIV and AIDS and water scarcity and variability in the context of the political and economic crisis in Zimbabwe.

7. To examine the appropriateness of political ecology as a framework for understanding household experiences, responses and interpretation of multiple-stressors, within a structural context.

1.5 Contributions of the Study

This study can be justified on two grounds, namely: contribution to academic scholarship and relevance to policy interventions in rural communities in Zimbabwe.

The study is pertinent as it makes an academic contribution in understanding the problems and rural community experiences related to water scarcity and variability and HIV and AIDS. Literature reviewed in chapters Two and Three attest to the dearth of knowledge on the relationship between HIV and AIDS and natural resources, particularly water. This has been a result of scholars pursuing research on these two subjects separately with little or no effort to understand the impacts on the rural household of the relationship between these two issues. The rural household finds itself at the epicentre of water scarcity and variability and HIV and AIDS. This thesis will therefore make a contribution to the gap in the literature by undertaking an empirical study and in so doing contribute to theory, specifically political ecology theory. Political ecology has great potential to be used as a framework of analysing health issues especially when they relate to the environment (King, 2005).

Both water scarcity and variability and HIV and AIDS are topical problems for Africa and the world at large. Numerous conventions and policies have been instituted in order to

address social and ecological problems that emanate from these two issues. Policy in Zimbabwe and elsewhere has pursued them as separate issues yet they relate to one another in very complex ways. In Zimbabwe health issues are dealt with by the Ministry of Health and Child Welfare, while water issues are dealt with by Ministry of Natural Resource. This parallel policy and management approach is maintained from the national level down to the local authority level. This study will raise awareness of the complex interactions between HIV and AIDS and water scarcity and variability, hence the outlining need for a consolidated policy framework across these two sectors.

This study will, furthermore, provide information which is useful in HIV and AIDS, water and poverty alleviation programmes in Zimbabwe. An understanding of multiple issues that create vulnerability amongst rural households is necessary in designing interventions. Governments and Non-Governmental Organisations (NGOs) have long been implementing programmes in order to empower households to cope with adversities. These interventions need to consider the broader spectrum of hardships faced by communities as they deal with both HIV and AIDS and water scarcity and variability. According to Drimie and Casale (2009), the challenge is that by pulling at one strand of the knot of these issues, one only entangles the situation further. Most of the interventions (such as IWRM and food security programmes targeting agriculture) to alleviate vulnerability in rural households in southern Africa have failed to achieve sustainable livelihoods (O'Brien, *et al.,* 2008; Drimie and Casale, 2009). It can therefore be argued that such efforts to achieve social wellbeing have been reduced to stopgap measures in the face of societal and environmental change, including HIV and AIDS (Maunder and Wiggins, 2006). Lessons from Zambia, Malawi and South Africa indicate that intervention programmes that ignore the interactions of hardships have failed because underlying reasons for vulnerability are often hidden as well as the failure to realise that broader social contexts are linked across space and impact at the community level (O'Brien, *et al.,* 2008). This study will attempt to fill identified gaps in literature and provide evidence on the community experiences with the burdens of HIV and AIDS and water scarcity and variability, in the Zimbabwean context.

1.6

1.7 Structure of the thesis

Chapter one presents the introduction to the thesis, namely the background to the rationale for the research and the statement of the problem which leads on to the research question, aim and objectives. The contribution of the study will be presented after the research questions.

Chapter Two presents the first literature review chapter which discusses the scholarship related to environmental change, water scarcity and variability, and HIV and AIDS and their relationship. The literature reviewed informs the conception of issues presented in the thesis. The literature review will demonstrate the complex relationship between HIV and AIDS and scarcity and variability of water resources, and how the power dynamics that operate at the structural level impact on this relationship. In this chapter, gaps in the literature and other issues relating to the topic will be critically analysed.

The third chapter is the second conceptual chapter as it critically discusses the conceptual framework of political ecology in relationship to water scarcity and variability and HIV and AIDS. The ontology and epistemology of political ecology are explained. The chapter presents the history and development of political ecology from structural political ecology to post-structuralist political ecology. The chapter presents an argument for the adoption of post-structuralist political ecology as the adopted framework for this study.

Chapter Four presents the historical context of the study area. This chapter is necessitated by the fact that very little has been documented on the Nyamakate community. The chapter presents contextual information on the Nyamakate reconstruction under the land reform policy, economics, rural governance, health sector performance, natural capital and socio-demographic profile.

Chapter Five presents the methodology adopted by the study. The study is grounded in post-structuralist political ecology the study adopts a qualitative methodology. The chapter discusses and argues why the qualitative paradigm was chosen within the context of the study. The chapter presents the data collection tools, sampling criteria, data handling and interpretation. The chapter concludes by discussing limitations to the study.

Chapter Six is the first chapter of four results chapters. The results presented in Chapter Six focus on the institutional influences and context within which the Nyamakate community strive to make a decent livelihood. The results presented will answer objectives three to six. The results present the findings regarding institutional support and the influence of the political economic context. The findings focus on the support rendered by government and Non-Governmental Organisations and the instances of the absence of support.

Chapter Seven is the second of four results chapters. It presents the findings on the experiences of households and the Nyamakate community in relation to HIV and AIDS. The findings presented in this chapter address the first objective. The chapter presents the experiences of households with the impacts of HIV and AIDS and the coping mechanisms adopted by the households.

Chapter Eight is the third results chapter. The findings presented in Chapter Eight address the second objective, and it deals with the households' experiences with the impacts of water scarcity and variability. The chapter presents a description of the natural capital in the Nyamakate area before discussing the water situation. The households' experiences of water scarcity and variability and the coping strategies adopted form the core of this chapter.

Chapter Nine is the final results chapter out of four. Chapter Nine presents the findings on the relationship between HIV and AIDS and water scarcity and variability as experienced by the Nyamakate households at the local level within the context of the Zimbabwean political economy.

Chapter Ten is the final chapter presenting a discussion of the results and the conclusions. The study findings and their application to political ecology theory presented in the previous results chapters will be summarised and discussed. This chapter discusses the suitability of post structural political ecology in understanding household experiences of HIV and AIDS and water scarcity and variability within the Zimbabwean political economy structure. The chapter finishes with some recommendations for academics and policy makers.

Chapter 2: Literature Review

2.1 Introduction

This chapter is the first of two theoretical chapters and aims to review literature on environmental change, specifically water scarcity and variability and HIV and AIDS, and their relationship within a rural setting. This is in line with the aim of this thesis which is to analyse the experiences, responses to, and understanding of Nyamakate households of the complex relationship between HIV and AIDS and water scarcity and variability and how this impacts on their livelihoods and social well-being within the context of the country's political economy. This chapter therefore has three sections: the first, a review of HIV and AIDS research the second, a critical discussion of water scarcity and variability and, thirdly, a review of the literature that relates water scarcity and variability and HIV and AIDS. Hereafter, Chapter Three then presents a review of political ecology theory, which is proposed as the meta-theoretical framework for this research. It is argued that in order to understand people-environment relations these relations need to be contextualised in the broader political economy.

Section 2.2 presents epidemiological studies which show the level of susceptibility of Southern African communities to HIV. Important statistics on the risk and exposure of different communities in different areas are presented in order to frame Zimbabwean HIV prevalence and trends among different population groups. Statistics provided in such epidemiological research do not explain, however, the everyday experiences of the affected households.

Hence the literature review in this chapter examines scholarship around the experiences of the affected household and their responses to the impacts of HIV and AIDS. Section Three of this chapter will discuss the impacts of HIV and AIDS that render rural households vulnerable and attempts to cope with adversities. There is a large body of literature that exists to understand the impacts of HIV and AIDS on households and communities, and this

knowledge provides an important conceptual framework for understanding the experience of HIV and AIDS in the empirical study undertaken for this research (Drimie, 2002; Bell, *et al.,* 2004; Barnett and Clement, 2005; Mishra, *et al.,* 2007; Davis, 2010).

At the same time, studies from ecology have examined changes in the biophysical environment providing evidence to show the decline in water resources in southern Africa (Mhlanga, *et al.,* 2006; Gbetibouo, *et al.,* 2009; Ndebele-Murisa, 2010). In southern Africa, water scarcity and variability studies have kept the subject in isolation from social systems that interact with the resource. These studies are however in agreement that water is important for human livelihoods but most of the studies stop at this acknowledgement.

Finally, for this research it is important to understand the linkages between HIV and AIDS, and water scarcity and variability. Section 2.2 reviews the epidemiological statistics of the pandemic, sections 2.3 and 2.4 provide reviews of the conceptualisation of impacts of HIV and AIDS on the rural population. Specifically, Section 2.5 reviews the coping mechanisms adopted by households, and section 2.6 reviews literature on water scarcity and variability. The final section, 2.7, reviews the relatively small body of literature that examines the relationship between HIV and AIDS and water scarcity and variability. This section illustrates that there is a dearth of scholarship on the relationship between HIV and AIDS and water scarcity and variability.

2.2 HIV and AIDS Statistics

Epidemiology studies present trends in diseases. Maxcy, (1926) (as cited by Lilienfeld, 1978)defined epidemiology as the field of medical science which is concerned with the relationship of various factors and conditions which determine the frequencies and distributions of an infectious process, a disease, or a physiologic state in a human community. HIV and AIDS only came to be known in medicine in the early 1980s (Barnett and Blaikie, 1992; Barnett and Grellier, 2003). The disease quickly spread, and it reached pandemic levels in sub-Saharan Africa within a short period (Barnet and Blaikie, 1992). By the end of 2011,

the global estimate of people living with HIV was estimated to be 34.0 million (UNAIDS, 2012). AIDS has taken its heaviest toll in sub-Saharan Africa, where the region accounts for 69% of the people living with HIV globally (UNAIDS, 2012). Sub-Saharan Africa is severely affected by HIV and AIDS and is home to an estimated 23.5 million people living with the virus (UNAIDS, 2012). As summarised in the introduction, the UNAIDS report indicate that countries within southern Africa have the highest sero-prevalence rates globally; Swaziland is the highest with a prevalence of 26.1%; Botswana follows with 23.9%; then Lesotho is next with 23.2%; and South Africa with 18.1% of the population (UNAIDS, 2010). South Africa's high HIV prevalence, combined with its population size, makes it the country with the most people living with HIV and AIDS in sub-Saharan Africa and the world.

After the first incidence of HIV in Zimbabwe in the mid-1980s, the epidemic reached its peak in 1997/1998 with a sero-prevalence of 29.3% (WHO, 2008). The epidemiological data shows that HIV sero-prevalence is declining from this high peak. Prevalence in the adult population in Zimbabwe was estimated to be 23.7% in 2001, and declined to 18.4% in 2005, and 14.3% in 2009, and further declined to 13.1% by the end of 2011 (Government of Zimbabwe, 2012). Antenatal data has also reinforced the authenticity of the evidence of the decline in HIV. Antenatal HIV prevalence decreased from 25.8% in 2002, to 21.3% in 2004, 17.7% in 2006 to 16.1% in 2009 among the 15-49 years age group (Mahomva, *et al.,* 2004; Lopman, *et al.,* 2008; Government of Zimbabwe, 2012). The Ministry of Health and Child Welfare population surveys from 1998-2000 and 2001-2003 in Manicaland province were undertaken to ascertain the decline in HIV prevalence and to determine the factors responsible for the decline in the epidemic (MoHCW, 2004; UNAIDS, 2005). The HIV sero-prevalence shows a significant decline[8] in HIV prevalence from 23.0% to 20.5% which was recorded between the first (1998–2000) and second rounds (2001–2003) of the study (Gregson, *et al.,* 2006). Although the decline has been much debated, critics, institutions and scholars such as Mahomva, *et al.,* (2004); Gregson, *et al.,* (2006, 2010), UNAIDS, (2005; 2012) and the Government of Zimbabwe (2012) do agree that the statistics reflect what is happening on the ground and hence, the epidemic can be accepted to be slowing down.

[8] logistic regression controlling for age, sex, and location; p,0.01

The factors that have led to the decline of the HIV and AIDS pandemic in Zimbabwe have not been universally agreed upon. The decline has been attributed to the change in sexual behavior, specifically the decrease in the number of sexual partners, increased condom use and mortality. This conclusion was reached after analysis of the numerous cohort studies carried out by Gregson, *et al.,* (2006, and 2010). Gregson, *et al.,* (2006) caution against jumping to conclusions because of the high death and migration rates in the country. Death rates are particularly high in individuals with high numbers of sexual partners, and their death decreases the variance in reported numbers of sexual partners (Gregson, *et al.,* 2006). This, in turn, alters the sexual network within the population through which HIV infection spreads.

On the other hand, others have argued that sexual behavior change would be the only factor responsible for the decline in HIV infections in Zimbabwe. Lopman (2008) places more emphasis on the potential contribution of high mortality rates in Zimbabwe to partly explain the decline in HIV and AIDS pandemic. He argues that because of the long incubation of HIV progression to AIDS, which results in death, the impact of interventions or behaviour change on HIV and AIDS epidemic will accrue slowly hence this is difficult to observe empirically (Lopman, 2008). The limitation in current research is that it is not able to explain the relative contribution of all the risk factors that drive the epidemic. Hence, scholars who emphasise the importance of behavioural change as being responsible for the decline of HIV and AIDS epidemic assume that those who become infected engage in risky behavior more than those who do not acquire infections (Lopman, 2008).

The decline in HIV incidence could also be because of the large population of people that have migrated outside the country (Gregson, *et al.,* 2012). About a third of Zimbabwe's population lives outside the country either in neighboring states or overseas countries (Sawers and Stillwaggon, 2010). Migrant populations have been identified as populations at risk of contracting HIV (Allison, *et al.,* 2004; Sawers and Stillwaggon, 2010). Over 60 countries have HIV testing requirements in order to control the movement of migrants who are HIV positive or suspected to be positive (Allison, *et al.,* 2004). Gregson *et al.* (2010) attempt to account for the impact of migration on HIV and AIDS epidemic, but their analysis falls short of providing evidence to show the relative significance of migration in the reduction of HIV prevalence and AIDS epidemic in southern Africa. Their analysis lacks empirical evidence to

contribute to the argument about which factors have contributed to the decline in HIV prevalence. Halperin, *et al.,* (2011) argue that for migration to have caused a decline in HIV and AIDS prevalence, the disease would have needed to be highly concentrated amongst those people who have migrated. This is highly unlikely and there is no conclusive study to prove this.

Although the sero-prevalence of HIV is decreasing, AIDS has caused high levels of mortality in Zimbabwe specifically, as well as in southern Africa. The number of deaths in Zimbabwe due to AIDS reached a peak of 170 000 in 2004 before starting to decline to 140 000 in 2007 (UNAIDS/WHO, 2008). AIDS mortality mainly affects the productive age group of the population who are between 15 and 49 years. As a result there are an increasing number of orphans, usually with no one to take care of them. Robertson *et al.,* (2010) have noted the discrepancies between the United Nations (UN) and the Demographic and Health Survey (DHS) estimates for maternal orphans. It is reported that the UN data shows higher numbers of orphans than the DHS, because UNAIDS uses a mathematical model that exaggerates the numbers (Robertson, *et al.,* 2010). The approximate number of children orphaned by AIDS in Zimbabwe in 2007 was 1 043 715, while estimates for 2008 and 2009 were 1 025 472 and 989 009 respectively (Government of Zimbabwe, 2010). The orphans face numerous challenges to achieving a sound livelihood. The most frequent problems include school drop-out, food shortage and lack of clothing and accommodation. It is predicted that most of them will end up as subjects of abuse and become prostitutes or thugs making them susceptible to contracting HIV (Mangoma, *et al.*, 2008).

The body of literature presented in this section demonstrates the epidemiology of HIV and AIDS specifically in Zimbabwe, within the southern Africa context. The crucial demographic indicators used by epidemiologists in understanding the trends and impacts of HIV and AIDS have been reviewed in this section. These include incidence of HIV and AIDS, mortality and migration. These indicators inform an understanding of households' experiences of HIV and AIDS in the Nyamakate area discussed in Chapter Six. The experiences of the impacts of HIV and AIDS on individuals and households should be understood in the context of an epidemic that is declining amidst a heavy burden of the disease due to increased life-span of infected people due to the administration of anti-retroviral drugs. This section has also

presented some weaknesses in the epidemiological studies since they use large data panels which cannot show the lived experiences of people confronted with HIV and AIDS. Thus, the next section will review empirical research that deals with the way that rural communities are rendered vulnerable by AIDS to stressors.

2.3 Conceptualising Impacts of HIV and AIDS

The literature reviewed in this section focuses on studies that have conceptualised the impacts of HIV and AIDS on households and have conceptualised about their vulnerability to the pandemic. Since the mid-1990s, research on the impacts of HIV and AIDS has been increasing amongst social science disciplines, for example in sociology, demography, anthropology, geography and economics. The literature suggests that the HIV and AIDS epidemic has two unique characteristics. Firstly, the speed which the virus has spread has proved to be quite overwhelming (Barnett and Blaikie, 1992). The HIV and AIDS trends for southern Africa and Zimbabwe presented in Section 2.2 above demonstrate the rapid spreading of the disease. In Zimbabwe, HIV and AIDS took about ten years to reach its peak prevalence of 29.3% of the total population. Secondly, the disease has a higher incidence among people between 15 and 49 years (UNAIDS, 2012). The high infection rates among the 15 to 49 years age group has had a profound effect on the demography of sub-Saharan countries (UNAIDS, 2012).

Scholarship on the social impacts of the AIDS epidemic has increased rapidly since the 1990s, and today a great deal of research has been undertaken on the subject. In the absence of a medical solution, social science research focused on the impacts of the pandemic on the social fabric (Barnett and Blaikie, 1992). Barnett and Clement (2005) conducted a literature review of published social sciences research on HIV and AIDS. They have catergorised all published research on the impacts of HIV and AIDS and have come up with the following categories (Barnett and Clement, 2005: 238):

1. Theoretical work to develop formal/quantitative economic analyses of the epidemic's impact.

2. Collection and analysis of household-level data for micro-economic impact studies.

3. Research that focused on HIV and AIDS impact on specific populations such as women, street children and the elderly.

4. Studies that utilized qualitative methodologies and surveys to explore the perception of HIV and AIDS among target populations; these studies are principally intended to help tailor prevention and containment programmes for specific target populations and hopefully increase programme effectiveness.

5. Papers exploring the relationship between HIV and AIDS and Africa's macroeconomic poverty. In these, the rhetoric of globalisation is invoked together with a strong focus on the role of national debt and structural adjustment programmes (SAPs) as being at least partially responsible for the lack of healthcare funding in sub-Saharan Africa.

6. The impact of HIV and AIDS on national and regional security with a burgeoning literature on the impact of HIV and AIDS on the civil service and armed forces.

7. Those studies which examine the relationship between HIV and AIDS and business.

8. Articles using cost-benefit and cost effectiveness analytic techniques and the discourse of efficient/equitable resource allocation in relation to decisions about who to treat in resource constrained environments.

Barnett and Clement's list omits a growing body of literature that deals with the HIV and AIDS epidemic and the natural environment. Examples of scholars who have researched this relationship are Hansen (1998) De Waal and Tumushabe, (2003) Kgathi, *et al.,* (2004) Drimie and Gillespie (2010) and King (2012b).This section does not intend to explore each one of the eight themes that are emerging within HIV and AIDS research, but to concentrate on literature that sheds light on this research project. Therefore literature from the social sciences that forms a conceptual base to understand the complex relationship between HIV and AIDS and water scarcity and variability will be presented in this chapter.

Demography studies argue that HIV and AIDS are altering the African population structure by raising the dependent population, morbidity and mortality and by reducing fertility and life

expectancy (Mekonnen, *et al.,* 2002; Tawfik and Kinoti, 2003). HIV and AIDS is increasingly recognised as a global problem (Haddad, 2001) and the leading cause of death in Africa (Haacker, 2003; Barnett and Clement, 2005; UNAIDS, 2012). In 2007, 2.1 million people died from HIV and AIDS in the world and three-quarters of the deaths were in Sub-Saharan Africa (UNAIDS, 2012). The productive age group is the worst affected by the pandemic hence there has been a reversal in the gains made on essential demographic indicators (Tawfik and Kinoti, 2003; UNAIDS, 2012). An example of how HIV and AIDS affects the productive age groups is illustrated by the predicted population pyramid of Botswana by 2020 (Figure 2.1).

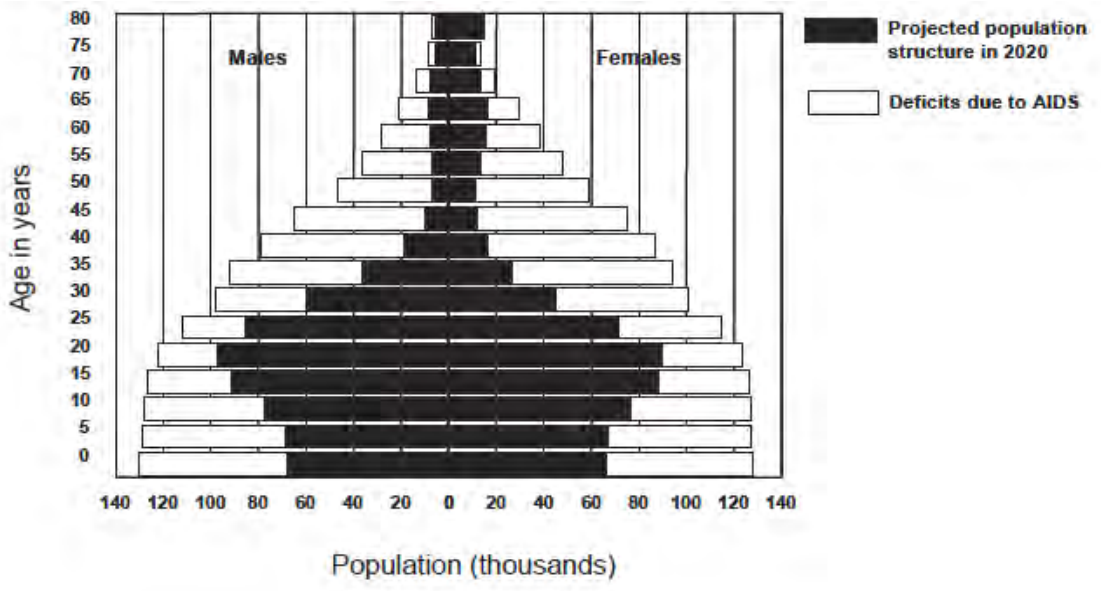


Figure 2.1 Projected population structure with and without the HIV and AIDS epidemic, Botswana 2020. *Source*: CHG (2004: 4).

The pandemic has increased mortality rates and reduced fertility. As early as 1998, life expectancy at birth within southern Africa had been reduced by approximately 20 years (Haacker, 2003). While in 2004, life expectancy at birth in this region has been reduced by almost 40 years (Commission on HIV and AIDS and Governance in Africa, 2004). The Commission on HIV and AIDS and Governance in Africa (CHG) 2004 report noted that seven countries in southern Africa have a life expectancy below 40 years of age namely:

Angola, Botswana, Lesotho, Malawi, Mozambique, Rwanda and Zambia. Zimbabwe's life expectancy in 2004 was 40 years with HIV and AIDS, but without HIV and AIDS it is predicted that it would have been 69 years. As illustrated in Figure 2.1, the population pyramid will be distorted if projections of negative population growth become a reality, and a 'population chimney' will be the result (CHG, 2004).

HIV and AIDS has taken its heaviest toll on the economicaly active age group (15-49), hence it affects the economy and consequently social life. Scholarship from economics has built on the demographic analysis by arguing that HIV and AIDS are related to poverty in complex ways (Over, 1998). A great deal of research has also been done in sub-Saharan Africa to analyse the relationship between the incidence of HIV and AIDS across social classes (Greener, 2004; Gillespie and Suneetha, 2005; Gillespie, *et al.,* 2007; Mishra, *et al*., 2007), showing that people with high incomes had higher HIV and AIDS prevalence (Gillespie, *et al.,* 2007). Most studies such as these are localised case studies which adopt positivist methodologies, and hence omit the lived experiences (Kitchin and Tate, 2000). Those infected within the affluent classes have access to medical care and nutrition hence they live longer with the virus. Sawers and Stillwaggon (2010) contend that longevity of the affluents' life might help explain the higher HIV and AIDS incidence. Sawers and Stillwaggon (2010) have reported that in a comprehensive study of eight countries conducted by Mishra, *et al.,* (2007), they did not control for longevity amongst the wealthy classes found to have the virus. It is generally agreed that when poor people are infected they are most likely to develop to the stage of full blown AIDS, fall sick and die much faster than rich people (Drimie, 2002). Furthermore, wealthier HIV and AIDS affected households are able to cope much better with the impacts of HIV and AIDS than their poor counterparts.

Publications on the impact of HIV and AIDS also focus on welfare and human development indicators such as human capital, household income and integrity of the family unit (Barnett, *et al.,* 2001). It is proposed that these parameters will provide an understanding of the impact of HIV and AIDS on society. One of the conspicuous impacts of HIV and AIDS is that it predisposes households to poverty. When bread winners die households have to deal with emotional stress and the economic challenges (Yamano, *et al.,* 2002). Families over-spend during the period of illness and families usually sell assets in order to purchase medication

(Donovan, *et al.,* 2003; Topouzis, 2003; Noameshie, *et al.,* 2007). The report on the special session of the general assembly on HIV and AIDS (2001) cited by Drimie, (2002: 8) summarises how HIV and AIDS leads to poverty amongst vulnerable communities.

> It [HIV and AIDS] changes family composition and the way communities operate, affecting food security and destabilizing traditional support systems. By eroding the knowledge base of society and weakening the production sector, it destroys social capital. By inhibiting public and private sector development and cutting across all sectors of society, it weakens national institutions. By eventually impairing economic growth the epidemic has an impact on investment, trade and national security.

Researchers and development practitioners have also argued that poverty exacerbates HIV and AIDS prevalence (Evans, 2002; Meher, 2007; Sawers and Stillwaggon, 2010). Smith (2002) argues that poverty leads women into unsafe sexual encounters as they try to earn a livelihood and support their siblings or family. However, Gillepie, *et al.,* (2007) argue that there is little evidence that points to the fact that poverty pushes women into transactional and unsafe sexual relationships. To say poverty exacerbates HIV and AIDS is to assume that prostitution is the only option for women who engage in transactional sex, mostly in order to earn a livelihood. Certain groups are more susceptible to contracting and spreading HIV and AIDS (White and Morton, 2005). For example, Evans (2002) studied street children (most of them orphans) and concluded that they were at risk of contracting HIV and AIDS. It is generally agreed that HIV and AIDS and poverty interact in a vicious circle. Casale (2006: 3) notes that "The complexity of dealing with the relationship between HIV and AIDS and socioeconomic variables is that the latter can be both determinants and consequences of the epidemic". The dual relationship between HIV and AIDS and poverty gives rise to complex causal patterns and feedback loops, which make single cause-effect relationships more difficult to isolate (SSRC, 2004).

Studies in the 1990s that attempted to investigate the macro-economic impacts of HIV and AIDS at the national level suggested that the disease had an insignificant effect on development and economic growth (Cuddington and Hancock, 1995; Bloom and Mahal, 1997). This conclusion resulted from the use of standard economic indicators as well as the

paucity of quantitative micro-level information (Yamano, *et al.,* 2002; Barnett and Clement, 2005; CHG, 2004). This conclusion has been maintained in the 2000s, since results from the new models of analysing macro-economic impacts of HIV and AIDS show only low to moderate impacts on economic growth and development (CHG, 2004). This observation is attributed to two factors: the evidence suggests that the heaviest loss of labour in Africa has been amongst the least productive workers; no African country has experienced the full impact of the pandemic due to the lag period between contracting HIV and developing to full-blown AIDS (Desbarats, 2002; CHG, 2004). Therefore, scholarship that seeks to understand the economic impacts of HIV and AIDS has tended to focus at the household and community levels.

There is a body of quantitative research that deals with the micro-level economic impacts of HIV and AIDS, but such studies have been critiqued for suffering from a lack of baseline data (Urassa, *et al*., 2001; Kahn, *et al*., 1999; Quigley, *et al*., 2000; Garenne, et al., 2000 Yamano, *et al.,* 2002). Hence scholars in this field studying micro-level economic impacts rely on case studies. A number of theorists have expanded the framework by capturing the multiple variables of the pandemic, such as human capital formation, household income and wellbeing of the household (Bell, *et al.,* 2004; Hacacker, 2004). Bell, *et al.,* (2004) focused on human capital in their theorisation of the economic impacts of HIV and AIDS because it is one of the few means available in neoclassical economics analysis to incorporate non-market phenomena (Barnett and Clement, 2005). The authors used the Overlapping Generations Model (OLG) to quantify how premature adult mortality from HIV and AIDS will affect the formation and transmission of human capital and the expected returns to investment from human capital from generation to generation (Bell, *et al.,* 2004).

Outside the intergenerational chacteristics of HIV and AIDS there are important intra-generational features that help explain power relations versus the epidemics. The epidemic shows that more women are infected more than men but live with HIV for a longer period than men (Jewkes and Morell, 2010). Scholarship argues that women are more susceptible to HIV than men (Gillespie and Kadiyala, 2005). According to biological studies, male-to-female transmission of HIV is two to four times more efficient than female-to-male (de Vincenzi, 1994). The anatomy of the female reproductive system can habour HIV, and

ulceration increases the infection chances for women (Gillespie and Kadiyala, 2005). The biological studies point to the sex (physical) differences, while theorisation in social science points more to the gender differences, since they seek to understand power relations and inequality in society.

Feminist and gender scholarship demonstrates the importance of sex and gender in analysing female susceptibility and vulnerability to the HIV and AIDS epidemics respectively (Wingood and DiClemente, 2000; Gillespie and Kadiyala, 2005, Drimie and Casala, 2009; Connell, 2012). The feminist movement was the first theory (in the 1960s and 1970s) to engage with social disparity between men and women and was later applied to HIV transmission in the 1990s (Wingood and Di Clemente, 2000). The arguments to understand causes of gender inequality are based on a nature/nurture binary that explain global patterns of men's dominance over women (Jewkes and Morell, 2010). Structuralist literature that follows this line of thinking argues that unequal power relations between women and men are informed by genetic and structural institutions that operate from the household to the global level (Connell, 1987; Wingood and Di Clemente, 2000). Connell (1987) came up with three structural factors that promote gender-based power inequality and these are: sexual division of labour, sexual division of power, and cachexia (social norms and affective attachments). Connell (1987) argues that these three structures exist at the societal and institutional level. Thus these socially engrained structures create better opportunities for men than women hence keeping women in an inferior position and dependent on the men (Wingood and DiClemente, 2000; Connell, 2012). According to Crush, *et al*, (2010), the way in which gender inequality operates both in the private and public domain can push women and young girls into high risk behaviour that exposes them to being infected.

The feminist literature argues that, to understand women's susceptibility to HIV, we need to understand power relations that inform exposure to the risk of exposure to HIV. A number of scholars agree with the argument that men have economic and socio-political power hence women cannot resist them. As a result men are major transmitters of HIV and they introduce it to their 'faithful' partners (Higgins, *et al,* 2010). This thinking is supported by studies that demonstrate men as having power to allure women, whether by force or negotiation, into sex and take total control. These studies show that men control sex, access to health, financial

resources, material possessions, patriarchal culture and shelter, and that women that require these commodities are exploited out of desperation. The social structures that reinforce gender inequality are maintained in institutions by social mechanism such as culture and gender stereotypes (Wingood and DiClemente, 2000). Hence women's relative powerlessness increases their risk of being exposed to HIV.

The structural models of analysing power relations between females and males have been attacked by those proposing the social construction of gender. The social constructionists of gender use gender identity discourse in their arguments (Jewkes and Morell, 2010). According to Jewkes and Morell (2010), the models on gender identity allow for the conceptual inclusion of men within the gambit of gender studies, which was not the case under structural feminism. For example, some studies argue that women are active social agents (Bene and Marten, 2008). Bene and Merten (2008) using the case of fish-for-sex argues that women are agents in the sexual contacts. They noticed that in the Kafue flats fishing operations women control the fish market since they are the buyer (thus they have more financial resources) but some opt for sex-for-fish in order to maximise profit. Although very few scholars look at HIV exposure from this view point, men can also be made susceptible to HIV infection by women.

The gender identity theory argues for the multiple configurations of masculinity which includes men subordinated by other men, referred to as 'hegemonic masculinity'. Gender inequality is therefore the power to dominate and create hegemony through popular consent constructed by acceptable ideas or value (Jewkes and Morrell, 2010). According to Jewkes and Morrell (2010: 3), "Hegemonic masculinity represents the dominant cultural model of idealised manhood". Studies have provided case studies from southern Africa that demonstrate gender related violence such as forced or coerced sex within and outside marriages (Gillespie and Kadiyala, 2005). Furthermore, women are less likely to control for condom use and at times HIV positive men have sex with virgins under the belief that they will be cured (Gillespie and Kadiyala, 2005). In food scarce regions, like Malawi and Zimbabwe, there are studies that show evidence of transactional sex for food and labor (Gillespie and Kadiyala, 2005).

Women, besides being more likely to be susceptible to both exposure and infection to HIV, are more vulnerable to other stressors. The bulk of literature on gender and HIV and AIDS in sub-Saharan Africa focuses on the gender roles that help to create the vulnerability of women to AIDS's perturbations. Thus, household wellbeing is affected in different ways depending on the gender and the former position of the deceased member in the household (Yamano, *et al.,* 2002; Yamano and Jayne, 2004; Mutangadura, 2005). Mutangadura (2005) argues that HIV and AIDS exacerbate the deepening and widening of gender inequality: "The HIV and AIDS epidemic presents a disproportionate burden on women, as their role as caregivers intensifies while at the same time they may lose access to land, labor, inputs, credit and support services" (Mutangadura, 2005: 16).

HIV and AIDS exacerbate the impacts of other stressors that confront the household, and the household gender and socio-economic status are important as they define the coping strategies to be adopted (Drimie and Casale, 2009). The AIDS epidemic contributes towards increasing social inequality in the community. Scholarship on the subject of gender and HIV exposure to risk stretches from structural scholars to behaviouralists, with the former proposing that it is social structures that cause gender inequality making women weaker and susceptible to contracting HIV once exposed (Wingood and DiClemente, 2000; Connell, 2012). This section has conceptualised the impacts of HIV and AIDS on households and southern African countries in general; the next section will focus on how rural populations experience the impact of HIV and AIDS.

2.4 Impacts of HIV and AIDS on Rural Populations

The problem of HIV and AIDS is more pronounced in Africa where it quickly reached pandemic proportions by mid-1990s (Barnett, *et al.,* 2001; CHG, 2004; Ansell, *et al.,* 2009). As Section 2.2 demonstrates, southern Africa has the largest population of HIV and AIDS positive people globally and hence the burden of HIV and AIDS is heaviest in the region. Rural households suffer the most, both from the burden of people who are infected within their communities and because they are also the recipients of patients who migrate from towns (Loevinsohn and Gillespie, 2003; Mutangadura, 2005; White and Morton, 2005;

Ndlela, 2008; Gill, 2010). HIV and AIDS infected individuals return to the rural areas from urban areas when sick for support and care giving by the relatives (Drimie, 2002; White and Morton, 2005). In analysing the impact of HIV and AIDS in the rural setting it is important to discuss the aspects of the household livelihoods that are affected. The pandemic has had its greatest impact at the household level as it predisposes people to poverty (Mutangadura, 2005; Meher, 2007).

A growing number of critics have questioned the claim that agriculture plays a central role in the rural household economy and is most affected by HIV and AIDS in the households (Ellis and Biggs, 2001; Bryceson, 2004). However, rural households are also engaging in other livelihood strategies such as petty trading, migrant labour and cross border trading (Leliveld, 1997, Bryceson, 2004). Researchers have ignored these non-agricultural livelihoods strategies, yet they are also affected by HIV and AIDS (Gillespie and Kadiyala, 2005). Hence a number of scholars prefer to analyse the impact of HIV and AIDS on food security to be able to account for non-agricultural and agricultural livelihoods strategies (Haddad, 2001; Barnett and Grellier, 2003; Loevinsohn and Gillespie, 2003). The 'New Variant Famine'[9] (NVF) hypothesis developed by De Waal and Whiteside (2003) has been adopted by scholars who utilise the concept of food security to measure the impact of HIV and AIDS on households. They attribute food insecurity in southern Africa to the HIV and AIDS pandemic, arguing that HIV and AIDS reduce the capacity of households both to produce and to purchase food. According to Ansell, *et al.,* (2009) there is reason to support the NVF hypothesis because six southern Africa countries that have experienced severe food shortages have very high HIV and AIDS prevalence rates. Food insecurity has traditionally been explained as a product of environmental shocks such as droughts (Ansell, *et al.,* 2009).

There is a well-developed body of literature in which food security is used as a measure of HIV and AIDS impact on households. According to Barnet, *et al.,* (2003: 19) food security means that:

1. food should actually be available,

[9] The 'New Variant Famine' hypothesis argues that the food crisis in southern Africa has three distinct features: widespread vulnerability that includes areas not affected by the crisis, a more rapid onset of household improvement than is usual, and the failure of households to recover quickly (de Waal and Whiteside, 2003).

2. people should have access to sufficient food,
3. supplies should be stable, and
4. food should be of good and dependable quality.

Within this approach, a household is considered food secure when all the above four elements are in balance. Food security is the outcome of: food production using mainly family labour, access to land and other resources, food purchase using household income, availability of assets and rights to social services (Barnet and Grellier, 2003). In rural areas in sub-Saharan Africa, the primary source of food consumed within the household is produced by the household. Purchased food will therefore only supplement the food produced by the household unit. Haddad (2001) argues that nutrition plays a big role in determining households' current and future ability to improve their livelihoods and thus, help to mitigate the impacts of HIV and AIDS and prevent its spread.

Proponents of the NVF hypothesis argue that across southern Africa the contemporary droughts[10] are less severe than those that occurred before, yet their shock on food production is greater (De Waal and Whiteside, 2003; Davies, 2010). Thus environmental explanations of food insecurity are inadequate, and this led NVF proponents to argue that the impact of HIV and AIDS on the household is a factor in explaining the food crisis (De Waal and Whiteside, 2003, Arrehag and De Waal, 2006; Mason, *et al.,* 2007).

Studies that analyse the impacts of HIV and AIDS on food security utilise the livelihoods framework, which places an emphasis on assets available for the household to generate a livelihood (Stokes, 2003). Studies have provided evidence that food shortage in rural communities in sub-Saharan Africa is the result of the HIV and AIDS pandemic (Mothibi, 2003; Gilliepie, 2005). De Waal and Whiteside (2003) have attributed these food shortages to four factors, which are: household level labour shortage, loss of assets and knowledge,

[10] Contemporary droughts in this case refer to droughts that occurred after the 2001/2002 drought. Furthermore, the shock of a drought is considered to be the variation of received rainfall contrasted against by the average rainfall. The NVF hypothesis proposes that the shock of a drought versus the loss in food production to argue that the food crisis is more than an environmental phenomenon.

increased burden of care, and the high levels of nutrition required by HIV and AIDS patients. Food insecurity can be a catalyst for an HIV infected person to develop full-blown AIDS, and at the same time food insecurity promotes risky behaviour like transactional sex (Chapoto and Jayne, 2005; Casale, 2006). It is therefore important to note that the impact of HIV and AIDS on household food security is difficult to disentangle from environmental and socio-political factors.

Ansell *et al.,* (2009) summarise the major criticisms and limitations of the NVF hypothesis postulated by De Waal and Whiteside (2003). The main criticisms of the NVF hypothesis are its narrow focus on households in exploring food insecurity and the ignoring of structural factors that shape the coping mechanisms adopted by households. There is no empirical evidence that there has been a decline in aggregate food production due to HIV and AIDS and that levels of malnutrition and starvation related mortality were shown to be not exceptionally high in drought years (2001-2) in sub-Saharan Africa (Harvey, 2003; Ansell, *et al.,* 2009).

Another school of thought has alternatively analysed the impact of HIV and AIDS on households using the four stage model of HIV progression to AIDS (Donahue, *et al.,* 2000; Drimie, 2003). The argument is that each phase of the progression from HIV to AIDS (namely asymptomatic; early illness; chronic illness; critical illness; and death and survivors) is associated with a different impact, which has different implications (Donahue, *et al.,* 2000; Drimie, 2003). This analysis differentiates the impact of HIV from a stage when the patient is still healthy up to post-death stage. Drimie (2003) uses this model to analyse the impact of HIV and AIDS on peasant farmer households focusing on their utilisation of land in South Africa, Lesotho and Kenya. According to Drimie (2003) throughout all the stages it is evident that poorer households are more vulnerable than the wealthier households with more access to economic and physical resources. The situation changes within households as the HIV positive individual progresses through the stages. The four stage model assumes that household agricultural production is the central income and food source.

HIV and AIDS becomes a problem when the infected person becomes symptomatic. At this stage, opportunistic infections are common and the infected person becomes bedridden. Quantitative studies have analysed the income loss to households at this stage, mostly through comparative research. Oni, *et al.,* (2002) compared the income levels of HIV and AIDS affected households and those not affected in Limpopo province, South Africa. Evidence shows that the aggregate annual income for affected households was approximately 35% lower than that received by unaffected households. They argue that income loss is not only because the ill person is no longer productive but also the caregiver sacrifices productive work to take up the care giving role. Social consequences of loss of income include school drop outs, food insecurity and lack of resources to invest in agriculture and other effects.

Sickness does not only impact negatively on income received but on household expenditure as well. Research shows that the family expenditure of an HIV and AIDS affected household will in turn increase (Oni, *et al.,* 2002; Meher, 2007). A significant amount of the household budget is spent on health care of the patient; families use up all their savings and end up in debt. Meher (2007), in a study in Orissa state in India, found that affected households borrowed money from private money lenders to meet medical expenses at a very high interest rate. According to Meher (2007) this put the affected families in a vicious cycle of debt and poverty. Studies in Africa have indicated the incidence of borrowing within social networks by affected households resulting in the vicious cycle of poverty (Oni, *et al.,* 2002; Goudge, *et al.,* 2007). The study by Goudge, *et al.,* (2007) shows that besides borrowing, rural populations adapt their healthcare use to avoid costs they cannot meet, at the risk of deteriorating health.

A number of studies have explored the impact of HIV and AIDS on household consumption. Using panel data from Ethiopia, Dercon, *et al*., (2005) found out that a chronic health related shock decreased household consumption by 14%. Davis (2010) has approached the same issue of household economics using the concept of household consumption. In his case study in rural Malawi he observed that health disasters reduced consumption levels within the short-run but that consumption levels would normalise in the long-run. According to Davis (2010: 79), “This could be because households are forced to reduce their immediate consumption, but are compensated through risk-sharing mechanisms with time”.

A large proportion of research reporting on the impact of HIV and AIDS on households focuses on the effects of the death of a bread winner on the household. Meher's (2007) research conducted in India shows that the costs of a funeral is higher than the cost of morbidity. Masanjala's (2005) research in Malawi showed that the death of a household member was ranked the most severe impact to the household. Economic studies have attempted to quantify the impact of an HIV and AIDS related death to a household. Masanjala's (2005) study concluded that shocks affecting an HIV and AIDS affected households will last for 18 months and the household is driven below the average-equilibrium monthly income of MK92.75[11]. Yamano, *et al*., (2002) showed that in Kenya, the prime-age death of a male has significant impact on household income. In this study, the death of a household head reduces the off-farm income by Ksh 43,081 (roughly US 595) per annum, which is about 79% of the initial off-farm income among households that experienced the death of a prime-age man (Yamano, *et al.,* 2002). The brief overview of some quantitative economic studies demonstrates that the impact of HIV and AIDS on household income is not certain. The studies show great variance as demonstrated in the two cases presented above.

While the majority of studies on the impact of HIV and AIDS on the household have been framed within a positivist paradigm using quantitative methods, there is a small body of qualitative research. Qualitative studies have explored the impact of illness including HIV and AIDS on the family structure in rural areas in Africa. De Waal, *et al.,* (2005) observed that in the case of sickness the household re-allocated household labour roles. These changes normally mean that the 'traditional' gender division of labour is transcended leading to men learning to cook and women collecting firewood, for instance (De Waal, *et al.,* 2005). Most of the studies on this issue utilise a gender approach (Drimie and Gandure, 2005; Hosegood, *et al.,* 2007; Schatz and Ogunmefun, 2007). The assumption is that women give up other activities to take up the care giving role for either their husbands or relatives. For example, school going age girls have to drop out to take caring duties at home (Drimie and Gandure, 2005) or have to work in a relative's household. Of note are the studies that are reporting the increasing role of older women in care-taking of the sick and their siblings (Ntozi, 1997; Help Age International, 2003; Ferreira, 2004; Hosegood, *et al.,* 2007).

[11] The current exchange rates of the MK92.75 per US$ are different from the time of the study. It was difficult to come up with an exchange of the Malawian Kwacha to the United States Dollar or any other major currency

Qualitative research has investigated the impact of the breadwinner's death on the household. Although most studies show a decline in livelihoods, the impacts of HIV and AIDS on agriculture which is the dominant rural livelihood strategy in sub-Saharan Africa, differ from one study to another. For example, Donovan and Bailey (2005) in their study in Rwanda found no significant differences in crop productivity by HIV and AIDS affected and none affected households. Significant differences were noted for crops commonly thought of as feminine such as beans, beer bananas and fruit bananas (Donovan and Bailey, 2005). Another study by Thangata *et al.,* (2007) in Malawi concluded that illness of an adult reduces the area the household can cultivate each year until the patient dies. Thangata *et al.,* (2007) separates the impact of a male and female adult within the household. They argue that, "[w]hen the person in the household with HIV and AIDS is the female the household can still be food secure, but when it is the male the representative household must reduce food consumption" (Thangata, *et al.,* 2007: 213).

Most rural households depend on agriculture as a major source of livelihood in sub-Saharan Africa. Hence most of the HIV and AIDS research that has been conducted in rural areas focuses on the relationship between HIV and AIDS and agriculture and food security (Tangata, *et al.,* 2007; Ansell, *et al.,* 2009, Gill, 2010). The agriculture in Africa's rural areas is usually labour intensive hence it is vulnerable to HIV and AIDS (Noameshie, *et al.,* 2007). Morbidity and mortality within the household will affect the labour supply for the productive activities. Gills (2010) noted that the periods of the biggest stress for farming households were periods of initial infection stage, morbidity and the period after the death of an adult.

There is increasing evidence to show that HIV and AIDS impact on the types of crops households produce. It has been found that cash crop production generally declines and food crop production remains constantly higher or even increase in some cases (Noameshie, *et al.,* 2007; Gill, 2010). Gill (2010) found that the death of a female household member was directly related to food insecurity within the household. This is because of the traditional gender roles: women produce food crops while men concentrate on cash crops.

Numerous studies have investigated the impact of death on the household structure. Studies by Schatz and Ogunmefun (2007) and Hosegood, *et al.,* (2007) have analysed the role of older women in care and support of multi-generational households in rural South Africa. Hosegood, *et al.,* (2007) observed evidence of dwindling social capital due to HIV and AIDS, especially after repeated deaths in a household. This worsens the burden on the grandmothers as social support disappears. They have attributed this also to generalised poverty levels in the study area of Hlabisa. However, what is important to note is that the burden of care of orphans is left to the grandmothers (Hosegood, *et al.,* 2007; Schatz and Ogunmefun, 2007).

Sections 2.3 and 2.4 present the conceptualisation of the impacts of HIV and AIDS in general and in the rural areas in Africa. Literature on the impacts of HIV and AIDS has dominantly adopted a positivistic approach. Hence, most of the studies have concentrated on quantifying the economic impacts. A further focus in the studies that have sought to understand the impacts of HIV and AIDS on rural populations is on the shocks the disease has had on agriculture. Conceptualisation of the impacts of HIV and AIDS in the Nyamakate community will benefit from the framework developed here.

2.5 Attempts by Households to Cope with HIV and AIDS

Section 2.5 will review the literature on coping strategies adopted by people affected by HIV and AIDS. Chambers and Conway (1992) argue that a sustainable livelihood is one which can cope with, and recover from, stress and shocks and maintain or enhance its capabilities and assets both in the present and in the future, while not undermining the livelihoods of future generations. Sustainable livelihood as such is assumed to be the the prime objective of humanity. Within this approach, coping can be defined as strategies employed by households that seek to minimise the cost and impact of adverse livelihood shocks such that future livelihood capacity is not seriously impaired (Masanjala, 2007). Within the framework of studies on the impacts of famine, Curtis (1995) states that :

> Famine coping strategies are a set of activities taken by a household in a particular sequence in response to external shocks that lead to the declining availability of basic needs. The long-term objective of these strategies is for the household to maintain its

> economic and social viability after the crisis has passed (As cited in Rugalema, 2000:538).

Curtis' (1995, cited in Rugalema, 2000) definition points to an anticipation that households or communities that have experienced an adversity will recover in the long run. When the adversity is over the household or community should reassume its economic and social function.

The concept of 'coping' has been a subject of debate especially when it is applied in the context of HIV and AIDS. The term has been adopted from studies that analyse the impacts of famine and other disasters in the 1970s to 1980s, and is currently being employed to analyse household responses to HIV and AIDS. In the face of the impacts of HIV and AIDS on the rural household in sub-Saharan Africa (presented in the previous section), the question is: how are HIV and AIDS affected households in the rural areas coping? UNAIDS (1999) argues that individuals and households undergo processes of experimentation and adaptation when adult illness and death impact, in an effort to cope with immediate and long-term demographic changes. Many studies have been conducted to try and understand the coping mechanisms of households and communities to HIV and AIDS (Rugalema, 2000; Barnett and Whiteside, 2002; Drimie and Casale, 2009).

The conceptualisation of coping strategies to the impact of HIV and AIDS has been influenced by neo-liberal economic thinking (Rugalema, 2000). Neo-liberal economics suggest that the market facilitates individuals, households and firms to cope with the impacts of HIV and AIDS. Neo-liberalism argues that when confronted with adversity, economic units (individuals, households, firms) will make rational decisions to overcome the situation by balancing out needs and resources (Rugalema, 2000). This means that households will have to sell their assets in order to pay for their basic needs (Devereux, 1993). This position is based on the assumption that there is a perfect market that will reward fair prices to commodities (Rugalema, 2000). However, this is not always the case in times of disaster as buyers will control the market price and, because of desperation, households will accept lower prices in the process. The household might have to sell all its assets and might never

achieve the balance between needs and assets. The neo-liberal perspective can be critiqued for its limited understanding of the situation of HIV and AIDS because of the longevity of illness and subsequent death (Barnett and Blaikie, 1992; Rugalema, 2000).

Numerous scholars have contributed to the understanding of the concept of 'coping' in relation to HIV and AIDS (Rugalema, 2000; Barnett and Whiteside, 2002; Gilliespie, 2005; Marais, 2005). Marais (2005) refers to the.

> Coping fetish that exalts the presumed pluck and grit of the poor. . . . the discourse of 'coping' is an acceptance, an endorsement even, of the way things are, a patronizing gloss on a reality of privation and marginality (as cited in Gillespie, 2005: 14).

De Waal and Tumushabe (2003) suggest that the term 'coping' is a misnomer when used in HIV and AIDS studies. They demonstrate that with any other shock such as drought and floods, households have potential to recover. However, in cases where households are subject to other shocks plus HIV and AIDS, the coping strategies do not work and impoverishment results. The term 'coping' can be misleading as it suggests that a household can actually manage, but this may not be the case when the long-term costs are actually undermining their livelihoods (Rugalema, 1999). Rugalema (2000: 540-543) discusses six issues that limit the use of the concept of coping in the context of HIV and AIDS:

1. Firstly, he argues that the concept of coping strategies is essentially concerned with the analysis of success rather than failure. Evidence from rural areas demonstrates that at times households do not cope or their strategies fail.

2. Households do not routinely plan and design their responses to disasters such as HIV and AIDS. At times, decisions to sell assets are not based on the importance or usefulness of an asset to the household.

3. Coping strategies are always conceptualised as short term, which obscures the true cost of coping. Those who use the concept of coping strategies to analyse responses to disaster have hardly, if ever, discussed the cost of coping.

4. The time span of analysis assumes that households will emerge out of a disaster with improved livelihood strategies. However, households emerge more insecure than before the effects of HIV.

5. It is also doubtful that HIV and famine can be comparable or conceptualised using similar frameworks. Barnett and Blaikie (1992) show that HIV is different from all other disasters because of its longevity.

6. Utilising the coping strategy framework is problematic for policy makers, since by definition, if a household is coping, then there is no need for government intervention.

Another body of literature from economics argues that the concept of 'coping' is still applicable to all shocks including HIV and AIDS. Drimie and Casale (2009) argue that scholars who doubt the usefulness of the term 'cope' fail to distinguish between erosive and non-erosive strategies. 'Erosive' strategies are those that are not sustainable and undermine resilience in the long run (Haan, *et al.,* 2003; Drimie and Casale, 2008). Households will prioritise short-term benefits over long-term benefits in an attempt to cope with illness. Drimie and Casale (2009) argue that erosive coping strategies include school dropout, transactional sex, third part labour and the selling of assets. School dropout as a coping strategy will affect human capital in future (Drimie and Casale, 2009). This body of literature demonstrates that 'erosive' strategies will eventually lead to households failing to cope and fragmenting in the process.

On the other hand households that adopt 'non-erosive' strategies have higher chances to cope with shocks in the long-run. Literature shows that households will take a course of action to manage shocks, whether these are nature or health related or both. UNAIDS (1999) has classified household coping strategies into three categories according to their aims: strategies aimed at improving food security, raising supplementary income and alleviating the loss of labour. Case studies undertaken in Kenya and Uganda demonstrate a number of 'coping' strategies adopted by HIV and AIDS affected households. Donahue, *et al.,* (2000) observed a pattern in assets disposal as a coping strategy amongst female microfinance clients. Evidence shows a sequence of liquidation of assets among HIV and AIDS affected households: savings were liquidated first, then business income, household assets, then productive assets and

finally the disposal of land. When families get to the point of selling their mode of production, the land, then the concept of coping is problematic to apply. Robinson and White (2000) claim that first there is the disposal of 'self-insurance' assets, then if necessary, people dispose of their productive assets. Other studies have documented selling of small animals as a strategy for coping with prime age death and raising income (Oni, 2002; Yamano, *et al.,* 2002). However, there are numerous studies in which the selling of assets as a coping strategy is shown to be a widespread practice (Munthali and Ali, 2000; Mbaya, 2002; Kimaryo, *et al.,* 2003; Masanjala, 2005; Ansell, *et al.,* 2009).

HIV and AIDS affected households experience labour shortages either as the caring role of the household decreases or as adults die. Studies in Southern Africa have documented the use of free community labour-sharing as a coping strategy (Mutangadura, 2005). On the other hand, additional labour is hired either in exchange for money or goods; this practice is called *ganyu* and *maricho* in Malawi and Zimbabwe respectively. Bryceson and Fonseca (2006) argue that the *ganyu* was a trusted and reliable way of sourcing of labour for those who could pay for it. The free community labour-sharing and paid labour system is both a household and community coping mechanism. If an individual participates in the community labour system, community members will also help work their fields in return (Bryceson and Fonseca, 2006). In the paid labour system, the labourer earns income for his or her household. These practices are traditional but they are being affected negatively by persistent droughts (Bryceson and Fonseca, 2006). Not all affected households can participate in communal work due to either ill health or a heavy caring burden, nor can they hire labour because they have no money to buy labour.

Another coping strategy used by rural households is to reduce household farm activities and farm sizes. Farm sizes are restricted in accordance with the available labour to work the land. For example, in Swaziland the area under cultivation decreased by an average of 51% in HIV affected households (Arrehag and De Waal, 2006). As noted in the section above, the production of cash crops and cereals is reduced, since they require a lot of labour. This affects the household's food security status. According to Casale (2006) households will produce crops which are not labour intensive even if they have very low nutritional value.

The engagement in non-agricultural activities is another coping strategy used by rural populations. Rural households attempt to cope with the pandemic by engaging in petty trading in agricultural products such as fruit and vegetables, while other households sell second-hand clothes (Adato and Meinzen-Dick, 2002; Dovie, 2003; Bryceson, 2004). A study in Swaziland has noted that HIV and AIDS affected households are increasingly shifting away from agriculture as the prime source of income to the selling of commodities and livestock (Swaziland Regional VAC, 2004). This could be because agriculture requires more labour and income is therefore seasonal, and yet, HIV and AIDS erode the household labor force.

Households withdraw their children from school in order to cope with income loss and increased labour demand (Oni, *et al.,* 2002). This is especially adopted as a strategy to allow the households to stop paying school fees, and simultaneously to provide the opportunity for the children to provide some care for the sick members of the households. In this way the labour supply for the household is increased (Mutangadura and Sandkjaer, 2009). This short term measure has long term consequences, as it promotes the vicious cycle of poverty and HIV and AIDS. Tomorrow's livelihoods are being sacrificed in order to cope in the short run (Haddad and Gillespie, 2001).

When household resources cannot cope, they frequently rely on their social networks. For example, a study in Limpopo province, South Africa, documented that affected households send their children away to live with distant relatives (Oni, *et al.,* 2002). This strategy reduces the family size and therefore the household living expenses. It also allows the relatives to provide some support to the affected households through paying the school fees of these children and providing for their basic needs. This situation brings into perspective the argument by Mutangadura, *et al.,* (1999) that the emergence of child-headed households can be considered to be an indication that the extended family is under stress and cannot cope. The situation worsens when the social network is so overstretched that it is no longer be able to cope. Affected households are forced to resort to lying to their extended family and neighbours in order to borrow from them. Jayne, *et al.,* 2005, in their study in Zambia found out that when all assets have been exhausted, household members resort to lying when

borrowing or stealing. Affected households would lie about when the money will be returned or exaggerate their financial position (Jayne, *et al.,* 2005).

Another coping strategy that has been found is the engagement of women in transactional sex. In this way HIV infected and affected individuals shorten their decision horizons by concentrating on the short term and sacrificing the future (McPherson, 2005). Epstein (2003) contends that female members in poorer households with few employment opportunities are more likely to engage in riskier sexual activities for economic reasons. Recent studies in several countries have shown associations between acute food insecurity and unprotected transactional sex among poor women (Bryceson and Fonseca, 2006; Krishnan, *et al*., 2008; Kim, et al., 2008). Mangoma, *et al.,* (2008) found that orphaned children in Kariba, Zimbabwe engaged in sex work in order to earn their livelihood. This study also provides evidence that female child headed households would engage in commercial sex in order to support other siblings (Mangoma, *et al.,* 2008). It is also reported that in Malawi, women and girls were undertaking *ganyu* labour beyond the confines of their village, with poor women at particular risk of transactional sex being increasingly incorporated into *ganyu* contracts (Bryceson and Fonseca, 2006).

Section 2.5 has presented literature on the concept of coping with HIV and AIDS in southern Africa. The concept of coping is critiqued by studies on HIV and AIDS, which provide evidence that some of the strategies lead to poverty and more suffering for the households in the long-term. Furthermore, the longevity of HIV and AIDS is found to overstretch the households' coping mechanisms. Since access to social, natural, financial and physical resources are under pressure, the ability of the household to cope with HIV and AIDS is compromised. In this study water is the natural resource under scrutiny and Section 2.6 will review literature on water scarcity and variability.

2.6 Water Scarcity and Variability

One of the aims of this study is to understand household experiences in relation to water scarcity and variability, hence Section 2.6 will review the related body of literature as it pertains to sub-Saharan Africa. There are numerous arguments in the literature as to what constitutes water scarcity. Based on the ten different conceptualisations of water scarcity presented in the first chapter, this section will review literature on both the socially constructed and the physical or volumetric conceptualisations of water scarcities.

Natural scientists have researched the biophysical shortages or absence of water. According to Mehta (2001) water scarcity, as a biophysical phenomenon, refers to the real water scarcity or water shortages resulting from very little precipitation. Precipitation is being taken as the source of water and it determines scarcity of water. More recently, climate change discourse proposes that the impact of climate change is responsible for the changes in both underground and surface water scarcity due to changing patterns in precipitation (Magadza, 2010; Edenhofer, *et al.,* 2012). There is evidence that the global average temperature has increased by between 0.4^0C and 0.8^0C over the past century, with most of the warming occurring prior to 1940 and over the past 25 years (Aldy and Orszag, 2001). Over the 20^{th} century, historical data suggests a decrease in rainfall over large portions of the Sahel, and an increase in rainfall in east central Africa (Desanker and Magadza, 2001). Projections by the Intergovernmental Panel on Climate Change (IPCC) suggest a current temperature increase of between 0.2^0C to 0.5^0C per decade (Field, *et al.,* 2012). Projections show a decrease in rainfall and more frequent drought and floods in the future of sub-Saharan Africa (Thomas and Twyman, 2005; Gornall, *et al.,* 2010; Field, *et al.,* 2012).

There is a recent increase in research into the impact of climate change on water resources in Africa including Zimbabwe (Thomas and Twyman, 2005; Mapedza, *et al.,* 2009; Magadza, 2010; Osbahr, *et al.,* 2010). The research sets out to understand the impact of climate change on aquatic ecosystems and agriculture from a purely natural science perspectives and then to infer the potential impact on people. Research by Magadza (2010) in the Zambezi valley has shown that the effects of climate change are significantly affecting the water quality and quantity of the Zambezi River through frequent droughts. Furthermore, changes in temperature regimes within the Zambezi valley have been shown to affect the aquatic life, by

altering the thermocline[12] for example by increasing/decreasing phytoplankton, kapenta (*Limnothrisa miodon*) and fish communities (Magadza, 2010; Ndebele-Murisa, *et al*., 2011). Research shows that the environmental services provided by wetlands, such as clean water, support of fauna aquatic (such as fish, crocodiles and hippopotamus), is being compromised. According to Allison, *et al.,* (2005), the organisms and ecology of rivers depend on the hydrological regime of the river channel and the floodplain flooding and recession. The changes in water quality and quantity affect the livelihoods of communities that derive benefits from accessing the water and aquatic life that depends on the water (Ndebele-Murisa, *et al*., 2011).

The threat of climate change impacts on food security has triggered funding into agricultural studies in order to understand and improve resilience to climate change by rural communities (Bonhle, *et al.,* 1994). A number of studies have documented the impacts of climate change on agriculture and the resulting food insecurity (Bonhle, *et al.,* 1994; Thomas, *et al.,* 2007; Ngoma, 2008; Gornall, *et al.,* 2010). African small scale-agriculture is the most vulnerable to climate change because it is dependent on rain-fed cropping (Gbetibouo and Ringler, 2009). With regard to small scale agriculture in southern Africa, the literature has demonstrated three climatic factors that affect agriculture, namely: drought, prolonged dry spells and floods (Ngoma, 2008). Water shortage to the plants affects the rate of photosynthesis and high temperatures amplify the water stress problem by increasing evapotranspiration (Dwyer, *et al.*, 2006; Ngoma, 2008; Gornall, *et al.,* 2010). Thus, plant productivity will decreases especially maize, barley and wheat. For example, Gornall *et al.,* (2010) noted that maize has reduced pollen viability in areas with temperatures that exceed 36^{o}C. To this effect climate change and variability have been identified as the premier constraint to agricultural productivity in southern Africa (Waddington, 1994; Makadho, 1995). Scholars from the natural sciences and agriculture have suggested technical means of abating impacts of climate change on natural environment in order to build resilience amongst rural communities who depend on the environment (Bene and Merten, 2008; Bellard, *et al.,* 2012). For example, Makadho (1995) suggests the manipulation of crop sowing times in order to cope with the erratic rainfall. Other scholars have advocated for genetically modified crop varieties that take short periods to mature (Thomas, *et al.,* 2007; Ngoma 2008). The studies discussed

[12] Thermocline is defined by Hey-Jin, K. and Miller, A. J. (2007) as the depth with maximum vertical temperature (density) gradient, and the buoyancy frequency.

above have been undertaken within the natural sciences field, hence used a positivistic approach that provides a quantitative understanding of the impacts of climate change on the availability of water and the resulting impacts on agriculture.

Social science studies show that, while natural science studies make important contributions to understanding climate change, this knowledge needs to be complemented with social science research which reveals that water scarcity can be socially created. It is important to supplement climate change research, which focuses on quantifying the biophysical parameters of change, by examining how the human agent understands and conceptualises the impacts of climate change on water availability (Gbetibouo, *et al.,* 2009).

One of the most dominant understandings of water scarcity has been offered by the discipline of economics. Economists define water scarcity as a situation where water demand surpasses supply. According to World Savvy[13] (2010) in 2000, one third of the world's population was living in countries considered to be physically water stressed, i.e. consumption exceeds the total water supply by 20%. Water resources are increasingly being transformed into economic commodities, an approach which is based on the premise that water has an economic value (Budds and Hinojosa-Valencia, 2012). Advocates of the commodification of water presuppose that the only way of conserving water is to give it an economic value (Budds and Hinojosa-Valencia, 2012). The concept of the valuation of environmental services shifts the responsibility onto the water user to pay. Using the rationale of neo-liberal economics, Africa has been experiencing the increased commodification of natural resources service delivery especially within the water sector (Budds and Hinojosa-Valencia, 2012; Buscher, 2012). This has led to the introduction of payment for ecosystem/environmental services (PES) in Africa. According to Buscher (2012) PES is based on the thinking that ecosystem services should be monetarised and conserved through the market.

The PES initiative in Maloti-Drakensberg has been subjected to interrogation by a number of scholars such as Turpie *et al.* (2008), Forslund, (2009) and Buscher (2012). Most of these

[13] http://worldsavvy.org/docs/2010_WAC-Water-Econ.pdf [Accessed on 24/12/2012]

scholars praise the PES approach in this area as being both financially and institutionally feasible, and hence rate the project as a success (Turpie, 2008; Forslund, *et al.,* 2009). Buscher (2012) however has criticised the positivistic accounts of the Maloti-Drakensberg PES initiative as being one dimensional and subscribing to the dominant theoretical and political thinking. According to Buscher (2012), most of the evidence from these studies is tenuous so that a convincing picture is painted of water supply that guarantees the flows of resources within the dominant economic paradigm. Other scholars have also been critical of the commercialisation of natural resources as it involves the redefinition of public goods as commodities (Bakker, 2003; Kaika, 2003; Wilder and Lanka, 2005). The social implication of this is to draw people into the logic of capital that is controlled by the market. In Athens, it was observed that high water pricing resulted in high-volume consumers getting greater price reduction for savings than lower-volume consumers (Kaika, 2003). Commodification of water is a form of re-centralisation of power and authority over water resources is subject to the demands of national markets and global economies rather than the interests of local households and citizens (Wilder and Lankao, 2005). The success of such an approach is doubtful in rural areas in Africa considering the political economy, colonial history and the politics that characterise most African countries today (Budds and Hinojosa-Valencia, 2012; Buscher, 2012). Within this context, poor rural people are alienated from the market and will have to go without water because they cannot afford to pay for it. As in the case study of Athens, the increase of water tariffs in 1990 meant that the high-volume consumers could cut their demand and still be comfortable, while the poorer low-volume consumers were forced to cut from their low consumption and hence were driven into a situation of water scarcity. Hence, water scarcity resulting from commercialisation of water does not take consideration of social inequalities.

Water scarcity can also be conceptualised as a product of the broader political economy and is thus, socially constructed. Scholarship within post-political ecology contests the economic analysis of natural resources especially their commoditisation (Kaika, 2003). Post-structural political ecologists analyse the interaction of people and the natural environment as it is mediated by power relations embedded within the structure (Forsyth, 2001; Biersack, 2006).

Post-structuralist political ecologists[14] and other social scientists have become critical of water governance by the state and are engaging with the construct of nature and their socio-ecological implications (Castree, 2002; Fletcher, 2010).

Political ecologists argue that nature is socially constructed and it is regarded as being in a dialectical relationship with society (Blaikie, 1985; Bryant and Bailey, 1997; Neumann, 2005). This means that nature is socially created. Hence, environmental problems such as water scarcity and variability should be treated as simultaneously being social and ecological in nature (Blaikie, 1985). The environment is subject to the power of the structure in the same way as the human society. According to Bryant and Bailey (1997), accepting the idea of a politicised environment is to acknowledge that environmental problems have to be understood in the political and economic context within which they are created. Thus, water scarcity and variability is not an apolitical process that can be solved by technical solutions only, making recognition of social inequality and politics important.

Political ecologists have interrogated how water governance structures and processes produce discourses that reflect and embody dominant interests and positions through contestation and struggle and therefore water scarcity and variability is a construction of these political structures (Escobar, 1996; Kaika, 2003; Sultana, 2011). Political ecologists presuppose therefore that the scarcity of natural resources is not necessarily a fact, but that natural resource scarcity can also be socially constructed (Escobar, 1996; Leatherman, 2005). Escobar (1996) argues that claims of natural resource scarcity create an excuse for environmental managers to legitimise the need for what they propose are efficient policies for natural resource. For example, the water reforms have been situated in discourses of neoliberalism and this has profound influence on economic, political and social practices (Sangameswaran, 2009). The idea of water as finite and has been conceptualised as being scarce and having a market value (Derman and Feguson, 2003; Sangameswaran, 2009). Following the Dublin principals water resources are increasingly being conceptualised as an economic good and this should be commercialised (Derman and Feguson, 2003; Sangameswaran, 2009). Yet these efficient management strategies secure capital

[14] Post-structural political ecology is a theory that informs this study, and Chapter 3 of this thesis deals with the assumptions and scholarship of political ecology in detail.

accumulation through the commodification of water, through both material and discursive means, which in turn produces particular forms of authority and social inequality (Escobar, 1996; Budd and Hinojosa, 2012). The political ecology approach thus reveals the limitations of water governance policies which advocate regulation and water markets, and in so doing induce water scarcity amongst the poor, despite being widely pronounced as good practices (Faysse and Petit, 2012).

Socially constructed scarcity is not apolitical as it is the product of institutional failure. Water scarcity, whether socially or climatically produced, is interpreted as leading either to the erosion of political institutions or to the exposure of their weakness (Turner, 2004). With the increasing influence of neo-liberalism, the government's role of governing water resources is shifting from central government to multiple institutions that include: the market, Non-Governmental Organisations (NGOs), and civil society and community organisations. Across this continuum, these institutions are at times competing or in conflict with one another. According to Budd and Hinojosa (2012: 4),

> Environmental governance thus concerns the organisational structures, institutional arrangements and decision-making processes and practices through which environments and resources are accessed, used, managed and regulated, which involves multiple formal and informal actors at different scales.

To exemplify how institutional limitations can create scarcity, two cases are presented below and will demonstrate this argument. Wilder and Lankao (2005) noted that in Mexico, state investment in water infrastructure had been modest and/or declining with protectionist measures for the poor shrinking in the face of expanding free trade reforms. Amid the decline in state investment in Mexico's water infrastructure, water demand was increasing due to the economic growth of 3% and a growth in population of 1.7% between 1992 and 2001 (Wilder and Lankao, 2005). This demonstrates the accumulation by capital while poor are driven into water scarcity. Another case of institutional weaknesses leading to water scarcity was documented in Gujarat, India. The groundwater scarcity being experienced in Gujarat can be blamed on gross mismanagement due to the lack of groundwater governance structures (Prakash, 2005; Mukherji, 2006). There was over exploitation of the water resources by

competing farmers. Water scarcity is buttressing social inequality as the rich are investing in underground water harvesting and the poor are forced to work for them at times in exchange for water (Prakash, 2005). The case presented above demonstrates that water scarcity has resulted from political and social struggles resulting in inequalities and a scarcity of water for the less powerful.

Contestation of access to water resources plays a dominant role in defining water deficiencies amongst certain social actors. In Africa, access to scarce water resources is often contested and characterised by conflicts at multiple levels, as access to resources is determined by social power dynamics (Scoones and Cousins, 1991; Mbereko, 2008; Sultana, 2011). According to Sikor and Lund (2009), people in communal areas struggle for access to natural resources as they attempt to legitimise their usufruct rights within politico-legal institutions and those institutions with power to legitimise access. The fear of losing access to ecosystem services impels more powerful groups to act pre-emptively to protect their existing resource access, even though that access is, by definition, disproportionately high (Butler and Oluoch-Kosura, 2006). Scoones and Cousins (1991) noted that powerful families especially those associated with the local leadership and ruling lineage controlled most of the wetlands in south-central Zimbabwe. More recent studies found that frequent droughts and water scarcity has resulted in competition and conflicts over wetlands in Zimbabwe (Sithole, 1999; Mbereko, 2010). While legitimised access rights do not necessarily guarantee actual benefit, it is equally true that lack of access to rights does not mean that benefits cannot be gained (Sikor and Lund, 2009). The shortage of labour within a household due to HIV and AIDS might compromise its ability to benefit from resources, even if they have rights to these resources.

There is a large body of literature relating to water scarcity and access. The contributions however, are predominantly positivistic because the studies are from the natural sciences and economics. However, social constructivist studies are increasingly adding to this literature by documenting the experiences of social actors with regards to water scarcity and the causes of this scarcity resulting from the social, economic and political structures. This literature is used to inform the empirical analysis of the links between HIV and AIDS and water scarcity and variability.

2.7 Household Vulnerability in the Context of HIV and AIDS and Water Scarcity and Variability

There is a paucity of literature dealing with the relationship between HIV and AIDS and water scarcity and variability, because traditionally, these subjects have been studied separately. However, there is an increasing realisation that HIV and AIDS affected households are also confronted by other 'stressors' mainly those that result from environmental change (King, 2010). When a household faces different adversities from many fronts, the household is said to be confronted by multiple 'stressors'. Scholarship on the multiple stressors experienced by households in their struggle to maintain their livelihoods and food security in sub-Saharan Africa has been related to stressors such as climate change and variability, political conflicts, trade liberalisation and burden of infectious diseases (Holloway, *et al.,* 2003; Mano, 2003; Drimie, 2004; Obrien, *et al.,* 2008; Drimie and Casale, 2009; 2010). These stressors interact in complex ways to produce risk, shocks and stress on households, undermining their resilience and ability to cope rendering them vulnerable (O'Brien, *et at.,* 2008; Lee and Quinlan, 2008; Drimie and Casale, 2009). This section reviews literature that seeks to understand the relationship between HIV and AIDS and water scarcity in the rural communities. The literature reviewed shows a binary causal relationship between HIV and AIDS and water scarcity and variability: first how HIV compromises the household's access to water resources and, further, how water scarcity complicates the household's ability to cope with HIV and AIDS.

Until recently, there was dearth of research that focused on the linkages between HIV and AIDS and natural resources (Torell, *et al.,* 2006; Sherbinan, *et al.,* 2007; Hunter, *et al.,* 2009). As a result, this complex relationship between natural resources and HIV and AIDS has largely been excluded from academic and policy debates. Some of the earlier scholars to study this relationship focused mainly on the impacts of HIV and AIDS on employees of organisations that conserve the environment (Haddad and Gillespie, 2001; Gelman, *et al.,* 2005; Torell, *et al.,* 2006). The impacts of deaths and illnesses amongst game reserve employees in South Africa, Malawi and Tanzania has had negative impacts on conservation

efforts (Gelman, *et al.,* 2005). According to Gelman *et al.,* (2005), HIV and AIDS has had a significant impact on conservation by increasing staff mortality, which has resulted in increased illegal use of natural resources, and changes in land use by HIV and AIDS-affected communities that border protected areas. For example, in Malawi, the Wildlife and Environmental Society had lost 14% of its 60 staff by 2005 (Gelman, *et al.,* 2005). HIV affects the productive age group, hence tacit knowledge of natural resources, experience and other desirable human attributes are lost (Torell, *et al.,* 2006).

Another body of literature to be examined here links HIV and AIDS to water and sanitation (Obi, *et al.,* 2006; UNICEF, 2006; WSP, 2007; Nkongo and Chonya, 2009). Improved sanitation and safe water has the potential to impact on health and reduce diarrhoea morbidity by 32% (Obi, *et al.,* 2006). Diseases associated with faecal contamination of water usually exacerbates the progression from HIV infected to AIDS through introduction of opportunistic infects such as cholera and dysentery (UNICEF, 2006; Nkongo and Chonya, 2009).

Microbiological research has shown the range of organisms that are associated with poor water quality and HIV and AIDS, and these are: *Cryptosporidium, Entamoeba histolytica, Salmonella, Shigella, Escherica coli, vibro cholera* and *Aero-monas* (Obi, *et al.,* 2006). The immune system of an HIV positive individual is more susceptible to common illnesses and diseases than HIV negative individuals, hence the higher demand for safe water and sanitation for the HIV infected people. About 90% of HIV and AIDS patients in Africa also contract diarrhoea infections, showing that HIV and AIDS exacerbates the diarrhoea epidemic (Obi, *et al.,* 2006; WSP, 2007). HIV and AIDS victims have limited access to safe water and sanitation hence they are more vulnerable to contracting opportunistic infection associated with water-borne vectors (Nkongo and Chonya, 2009). In such cases issues of water quality, quantity and availability are important in trying to live with HIV since it determines health, hygiene and household economy and gender roles. Literature suggests that rural households are more vulnerable to water scarcity and variability than urban households that have piped water (Nkongo and Chonya, 2009). Thus this thesis focuses on the rural population where the people's livelihoods and health are intricately linked to the natural environment.

De Waal and Tumushabe (2003) argue that the HIV and AIDS epidemic, coupled with more frequent droughts and food crisis, threatens to create 'famine' across many parts of southern Africa. Drimie and Gillespie (2010) conducted a literature review of studies that linked climate change to HIV and AIDS. They proposed that HIV and AIDS complicate the impacts of environmental stressors. HIV and AIDS is perhaps most significant in the way it affects the capacity of households to cope with a crisis (Ansell, *et al*., 2009), including the increasing weather shocks and climate stressors expected under climate change scenarios (Drimie and Gillespie, 2010). Gillespie (2006) agrees and argues that the primary consequence of HIV and AIDS in affected communities is the erosion of resilience and inability to cope with other stressors. This may result in traditional household coping strategies failing and may also exacerbate AIDS mainly through prostitution.

Other scholars have mainly focused on the causal chain of HIV and AIDS impacts affecting social unit (household, community etc.), and then shaping or re-shaping the interaction of the social unit with the natural environment (Barnett and Blaikie, 1992; Kgathi, *et al.,* 2004, Ngwenya and Mosepele, 2007). Within fishing communities in Botswana it has been noted that the loss of productive labour (due to HIV and AIDS) leads to declining productivity which also reduces household income and food security (Torell, *et al.,* 2006; Ngwenya and Mosepele, 2007). Kgathi *et al.,* (2004) found that about 46% of households in the Okavango Delta had continuously ill person/s who stated that fisheries were one of their main livelihood strategies. The potential of the contribution of fishing to the household and the community is threatened by HIV and AIDS as it is eroding the productive labour force (Ngwenya and Mosepele, 2007).

There is a body of literature which has grappled with the question of the foot print of HIV and AIDS affected household on the environment (Ngwenya and Kgathi, 2006; Sherbinin *et al.,* 2007; Hunter, *et al.,* 2007; 2009). One argument is that the footprint of an HIV and AIDS affected household on the environment is reduced. Simplistic scholarship from demography assumed that, because of the high mortality associated with HIV and AIDS, the pressure on natural resources would decrease due to declining ratio of population to natural resources (Sherbinin, *et al.,* 2007). Hunter *et al.,* (2009) found that in rural South Africa, the death of a male household head decreased the household's likelihood of supplementing food intake by

gathering from the wild significantly due to the loss in productive labour. A study by Ngwenya and Mosepele (2007) demonstrates that in some of the villages along the Okavango delta fishing activities declined amongst HIV and AIDS affected households due to care giving roles and other fisherman became incapacitated (by ill health). Thus, HIV and AIDS affected households consumed less aquatic resources, in this case fish, due to the labour shortage caused by the pandemic. However, there is need to turn to literature that includes other resource important for care taking.

A second body of literature examining the question of the environmental foot print of HIV and AIDS affected households argues that affected households increase the use of the environmental resources (Torell, *et al.,* 2006; Hunter, *et al.,* 2007; Sherbinin, *et al.,* 2007). These studies which discuss the relationship between HIV and AIDS and environment document the impact on a household from the time of mortality (Hunter, *et al.,* 2007; Sherbinin, *et al.,* 2007; Hunter, *et al.,* 2009). Households struggle to cope with the death of a bread winner, and hence the environment performs an important function of being the buffer to HIV and AIDS affected households (Hunter, *et al.,* 2009). Some HIV and AIDS affected households in Africa engage in harvesting of natural resources such as grass, bark cloth, fuel wood and wild fruit, for both domestic and commercial purposes (Hunter *et al.,* 2007; Sherbinin, *et al.,* 2007). These products are sold and the family receives an income. Torell *et al.,* (2006) also found that HIV and AIDS increased the exploitation of natural resources. They noted that ill fishermen in Botswana were mainly concentrated in the shallow end and used small mesh-size nets in order to catch more fish. Another response by HIV and AIDS affected households is to diversify their livelihood strategies. Sharbinin *et al.,* (2007) observed that HIV and AIDS affected households were mostly inclined to harvest fuel wood rather than buy or pay for an alternative, in order to save the money for other uses. A study by Hunter *et al.,* (2007) in Agincourt, South Africa shows that poor HIV and AIDS affected households were increasingly harvesting environmental resources (such as locusts and A*marula* fruit) in order to cope with their dietary requirements. They found that households experiencing a male death harvest more from the natural environment than those experiencing a female death (Hunter, *et al.,* 2007). While these results apply to natural resources other than water, it can be inferred here that the findings also apply to explain the relationship between water scarcity and variability and HIV and AIDS.

One of the few studies that have focused on the footprint of HIV and AIDS on water resources is by Ngwenya and Kgathi (2007) in Botswana. They found that in Ngamiland, households taking care of HIV ill patients used an additional 20 to 80 liters of water more thanthe non-affected households. The same study found that an erratic supply of portable water resulted in an increase in the use of water of poor quality and other practices of poor hygiene. For example, bathing of patients was reduced from twice daily to once or not at all (Ngwenya and Kgathi, 2007). Poor quality water is known to habour disease-causing organisms like cholera and schistosomiasis (Obi, *et al.,* 2006). Such a situation is known to exacerbate opportunistic infections that result in quickening the progression of an HIV positive person to full-brown AIDS (Sanchez and Swaminathan, 2005; Ngwenya and Kgathi, 2007).

Section 2.7 has presented a review of literature that relates HIV and AIDS to the natural environment which helps to understand the relationship between HIV and AIDS and water scarcity and variability which is the aim of this study. There is not much research that exists on the relationship between HIV and AIDS and water scarcity and variability.

2.8 Conclusion

Chapter Two presented an overview of the literature focused on three themes: HIV and AIDS statistics and impact on households; water scarcity and variability; and the relationship between HIV and AIDS and water scarcity and variability. The second section of the chapter discussed the epidemiology of HIV and AIDS in Africa with a focus on southern Africa. It was noted that the epidemic in Southern Africa rapidly increased within the first ten years from 1980s to 1990s and it is now decreasing through at different rates amongst countries in sub-Saharan Africa. Along with epidemiology studies, demographers expanded their analysis to analyse the impact of the pandemic on important indicators like morbidity, mortality and population structure. The gains in health and disease eradication in the region in some of these key demographic indicators are being eroded because of HIV and AIDS. From these two disciplines (demography and epidemiology), evidence shows that rural households are

the worst affected by HIV and AIDS. Rural populations struggle with the impacts of the epidemic locally and also have to care for their relatives who migrate to rural areas when ill.

It has been established in this chapter that HIV and AIDS has been conceptualised as having had a negative impact on communities and households. Scholarship on the impacts of HIV and AIDS has focused on food security and the stages of HIV and AIDS progression. The food security approach focuses on household food security as an indicator of the severity of the impact of HIV and AIDS. This approach has been critiqued as being too narrow as it misses out on aspects such as medical and other costs. The second approach reviewed in the chapter is the HIV and AIDS staged approach which hypothesises different impacts of HIV and AIDS at each stage until death. At the end of the day both approaches demonstrate that HIV and AIDS impoverish households.

The chapter demonstrates that the concept of coping is problematic; scholars like Rugalema (2000) have criticised the concept as applied to HIV and AIDS affected households. It proposes that HIV and AIDS households will recover and even be more resistant to future shocks. Case studies from South Africa, Malawi, Zambia and Zimbabwe show that households are not coping and become more impoverished with each stage until they end up disposing of the means of production. This realisation goes against the neo-liberal argument that selling of assets will equal household demands. Recently, Drimie and Casale (2009) have argued that scholars who doubt the usefulness of the concept of coping, fail to distinguish between erosive and non-erosive strategies which show that not all coping mechanisms erode the household's asset base, hence, there are some households that are coping. There is however very little evidence to support this view point.

Having argued above that most households are not coping, this places them in a vulnerable space where numerous stressors exist. There are studies which analyse the multiple stressors faced by poor rural households and why they are failing to cope. There is reason from the few studies that exist to link environmental change and catastrophes to HIV and AIDS in a circular way.

Households in rural areas rely heavily on natural resources for their livelihoods. HIV and AIDS complicate response to environmental induced stress such as water scarcity and variability. Water resources are scarce and variable, and yet HIV affected households rely on these for their livelihoods and most importantly to be able to cope with the pandemic. This linkage is poorly understood as very few studies have been conducted to investigate the relationship between water scarcity and variability and HIV and AIDS. What little research there is is highly localised and it has been undertaken in Botswana and South Africa.

In view of the literature reviewed in this chapter there is evidence to suggest that HIV and AIDS and water scarcity interact in complex ways. It is the aim of this thesis to contribute to this body of research within the context of Zimbabwe. This study contends that political ecology is an appropriate theoretical framework to understand the relationship between HIV and AIDS and water scarcity because it convincingly merges environmental and social systems (Barnett and Blaikie, 1992; King, 2010; 2012b).

Chapter 3: Political Ecology as a Conceptual Framework

3.1 Introduction

The previous chapter reviewed literature on HIV and AIDS and water scarcity and variability. This chapter presents the meta-theoretical framework for the research and draws on the literature from political ecology. This research utilises the political ecology approach because it interrogates the conceptual linkages between society, natural resources and health within the context of vulnerability created by structural conditions external to the actor. In this chapter, the emergence of the political ecology framework is discussed in relation to the shifts in social science paradigms. The chapter first presents the genealogy of political ecology in Section 3.2. This is intended to provide a background to post-structuralist political ecology as a meta-theory that informs this thesis. Political ecology has a history that stretches from the 1960s. Throughout its history, political ecology has undergone a significant transformation from being dominantly structuralist to post-structuralist. The chapter will, in Section 3.3, present a critique of the structuralist political ecology approach as a framework for analysing human environment interactions at the household level. The development of post-structural political ecology does not negate structural political ecology, which is heavily influenced by structuralist Marxism, but gives the actor more voice and agency. In Section 3.4, the chapter will discuss post-structuralist political ecology as the theoretical framework adopted by this study. The previous four sections of the chapter lay the foundations for the conceptualisation of connections between HIV and AIDS and water scarcity using the post-structuralist political ecology theory in Section 3.5. In Section 3.5, the chapter shifts to present the recent literature which theorises the link between health, social systems and the environment. It should be appreciated that the relationship between health and environment is relatively understudied by political ecology theorists. The chapter argues that the post-structural political ecology framework is appropriate for analysing the experiences of rural people and their response to HIV and AIDS and water scarcity.

3.2 The Emergence of Political Ecology as a Theory

There was no `classic' piece that marked the advent of political ecology as a theory as with other social philosophies such as Marxism and functionalism (Bryant, 1997). The emergence of political ecology as an analytical framework occurred in the 1960s. The anthropologist Eric Wolf is generally credited for formalising the theory when he first coined the term political ecology in 1972 (Walker, 2005; Biersack, 2006). Although some of the work during this early period never used the term political ecology the analysis conformed to the philosophy and epistemology of political ecology (Blaikie, 2008). Since the 1980s, political ecology was popularised by numerous authors such as Blaikie and Brookfield (1987), Bassett (1988); Black (1990), Bryant (1992), Neumann (1992), Moore (1993), Escobar (1996), Muldavin (1996), Bryant and Bailey (1997), Stott and Sullivan (2000), Walker (2005), Forsyth (2008) and King (2010) who used the term political ecology in their work. Consequently, the approach has ascended to prominence amongst scholars who interrogate the interface of human society and the natural environment. Forsyth (2003) noted that political ecology has increasingly been taken up by social scientists and less by ecologists and other natural scientists. It is important to understand that political ecology has increasingly been applied as a theoretical framework for analysing human-environmental relations.

Numerous factors account for why political ecology emerged at the time that it did. To a large extent, political ecology developed because of the shortcomings of existing scholarship that utilised positivist theories of adaptation, organic analogies and behavioralism to analyse local-scale human-environment interactions (Vayda and Walters, 1999; Biersack, 2006). These theories were developed to address the impact of the rapid expansion of capitalism, neo-colonialism, and decolonisation on the environment and the resultant environmental degradation in the 1960s and 1970s (Vayda and Walters, 1999; Walker, 2005). Explanations of this environmental degradation were mainly being analysed through orthodox natural sciences such as biology. This dualistic way of looking at nature and society separately resulted in scientists focusing more on the environment. Because of this people-environment binary humanity was assumed to be completely separate from nature, hence the assumption that degradation was caused by the resource users acting on the environment. This ‘blinkered world view’, according to Braun (2006) assumed that human utilisation of natural resources

signalled the end of nature because nature could only be truly nature without the interference of people. Natural scientists assume that environmental change and problems are politically neutral. This position went unchallenged by the dominant social ecology theories of the day, namely ecological anthropology and cultural ecology (Castree, 2003; Walker, 2005).

Ecological anthropology and cultural ecology developed as early as the 1940s (Boons, 2009). These theorists sought to explain the relationship between nature and society. According to Biersack (2006) these theorists explained culture through its adjustments to an extra human order, reducing culture to nature. These theorists understood society being organised at two levels, namely, the biotic and the cultural (Boons, 2009). They proposed that the interaction of species in their abiotic environment mimic human society, since they both rely on principles of nature such as succession of various developmental stages, which are characterised by species competition (Boons, 2009). According to Boons (2009: 29), "human societies differ from non-human ecologies in having a cultural level". Thus, they concentrated on linking human strategies of ecological success to cultural adaptation within the framework of human ecology, cybernetics and systems (Walker, 2005; Neumann, 2005; King, 2010). However, ecological anthropology and cultural ecology theories failed to explain the role of structural politics and globalisation in environmental degradation (Castree, 2002; King, 2010).

Ecological anthropology and cultural ecology applied the principals of ecology to the social world hence failed to understand the politics associated with the natural environment. They therefore believed that all power rests with nature and power stops being socio-historical and structural (Walker, 2005; Biersack, 2006). Hence, political ecology reacted to the neglect by these approaches of the political dimensions of human-environment interactions due to their preoccupation with the homeostatic or adaptive processes of social groups. In ecological anthropology and cultural ecology, communities were assumed to be equal, homogenous and autonomous units involved in, or engaging in, adaptive processes in relation to their biotic and abiotic environments (Vayda and Walters, 1999). Political ecology scholars started arguing for the importance of understanding the interrelationship between humans and environment to explain ecological degradation within a political context (Walker, 2005).

Early political ecologists explained resource depletion and vulnerability by analysing structural inequalities at the global and class level within a structural approach.

The second factor which led to the development of political ecology was the critique of Malthusian theory. Malthus[15] projected a scenario where resource use would grow at an arithmetic rate while population would increase at a geometric rate (Robbins, *et al.,* 2010). According to Malthus, the spiral growth of population and consumption are directly related and lead to resource depletion, hence creating a global crisis (Adger, *et al.,* 2001; Guthman, 2011). Malthus' ideas were restricted to food production, but neo-Malthusian scholars adopted and extended his ideas to include environmental problems in general (Robbins, *et al.,* 2010). Robbinson *et al.,* (2010: 52) have summarised the argument made by neo-Malthusians on the issue of environmental degradation, and argue that "… neo-Malthusian discourses have blamed individual food producers at the point of production for environmental degradation, due to their lack of knowledge or negligence". Political ecology gained momentum in the 1970s partly as a result of its criticism of neo-Malthusian solutions to the environmental crisis, which twas the curbing of population growth in order to ameliorate the pending environmental crisis. Bryant, (1997), Buchanan (1973), Darben (1975), Lowe and Worboys (1978) and Wisner, *et al., (*1982) were among the first political ecologists to criticise neo-Malthusian scholars for neglecting political economy questions in their research. Malthusian theory arguably diverted attention away from the real problem, that of uneven economic development and the drain of resources from the south to the north, which left communities in the developing world highly vulnerable to phenomena like droughts and floods (Bryant, 2001).

Political ecologists challenged the Malthusian ideas of population and resource interaction by explaining resource depletion as a product of the global political economy (Bryant, 2001; Adger, *et al.,* 2001; Munro, 2009). Political ecologists further take into consideration the complex dialectical relationship that exist among environment, society and structure (Kalipeni and Oppong, 1998). Political ecologists argued that the cause of resource depletion

[15] Thomas Malthus argued that, because of the natural human urge to reproduce, human population increases geometrically. However, food supply, at most, can only increase arithmetically. The thesis in Malthus's writing was that unchecked population growth would outstrip food production (Guthman, 2011).

is global capitalism and exploitation by the politically and economically powerful, rather than population growth or ignorant social actors. Thus, the arguments made by neo-Malthusians in the 1960s onwards created fertile ground for an alternative theory which did not assume a linear relationship between nature and society (Walker, 2005).

To understand the ontology and epistemology of political ecology, the factors that have shaped the theory have to be understood, Greenberg and Park (1994) use the Chinese proverb 'When business is bad, paint the store' to critique the dynamics of scientific theory. The question they are asking is: should we destroy old paradigms or use them as foundation for better understanding of research phenomena (Greenberg and Park, 1994)? Accepting the latter answer, therefore, political ecology does not constitute a new body of knowledge but an outgrowth of the central questions in social science about the relations between human society and a significantly humanised nature (Greenberg and Park, 1994; Walker, 2005).

The ground from which political ecology first emerged in the 1970s was defined by the confluence of cultural ecology and political economy on one side, and ecology on the other. As a result, political ecology is a broad theory, having been influenced by a number of disciplines. Political ecology therefore offers more of a multi-scale analysis than its predecessors in cultural ecology and ecological anthropology.

The discussion above has focused on social science disciplines which influenced the emergence of political ecology. However, the emergency of political ecology was also influenced by ecology (Walker, 2005). Ecological analysis has focused on the bio-environmental relationship. The term ecology was coined in 1866 to refer to science that studied the relations of organisms to the external environment (Worster, 1985). Charles Darwin's theory of evolution has been very influential since the earliest ecological studies. Darwin argued that biodiversity was the result of competition between individual species and the survival of the fittest (Greenberg and Park, 1994; Mallet 2008). Ecologists approach their analysis of nature from two perspectives, namely the evolutionary and the ecosystem approach. The ecosystem approach does not focus on entire systems but on interactions between a community of organisms (Schaffer, 1985). Meanwhile, the evolutionary

perspective supports Darwinian theory in which competition at the individual level provides the motivating force for change (Hagen, 1992; Mallet, 2008; Su, 2009). Evolutionary advocates argue that a community of organisms is nothing more than an assemblage of competing individuals.

Scholarship in ecology has shown that achieving a harmonious balanced (equilibrium) ecosystem is unrealistic (Schaffer, 1985; Wu and Loucks, 1995). These theorists assume a point of equilibrium in nature over-relies on highly simplified laboratory systems and then infers the outcomes onto the real world (Schaffer, 1985). In nature, individual species interact with other species hence the situation becomes more complex with every new level of interaction added. Furthermore, human-environmental interactions are added as another level of species interaction and complexity (Naveh, 1994). Research in non-linear analysis suggests that chaotic disturbances are normal (Schaffer, 1985; Huisman and Weissing, 2001). This has been called the chaos theory (Prigogine and Stengers, 1984). This perspective argues that species and environmental contexts fluctuate chaotically and that species do not simply reach permanent or even long term ideal adaptations with their environment (Prigogine and Stengers, 1984; Schaeffer, 1985; Worster, 1990). Huisman and Weissing (2001) view chaos as resulting from species competition within a specified geographical area. According to Greenberg and Park (1994), implications of this perspective are unclear; it is not clear whether the biological success of individual members of a species would depend on enhancing individualistic self-serving behaviour or that chaotic fluctuations are themselves the simple result of uncoordinated self-interest behaviour. This overview does not attempt to provide a detailed theoretical account in ecology other than to point to those aspects of the ecological theories that influenced the emergency of political ecology. The important point is that originally the ecological approach did not include human beings in ecological systems. Humans are viewed as agents that disturb and degrade the environment. Greenberg and Park (1994: 3) argue that "The introduction of culture and politics introduces causality at a number of new levels which complement rather than replace the causality associated with evolutionary process."

The emergency of political ecology was influenced more by Marxism than any of the social theories summarised above. According to Biersack (2006), political ecology is rooted in the

political economy dimension of dependency and world systems theory. Hence, the political economy was assumed to be the major causal factor in the early stages of theorisation in political ecology.

Political economy was therefore from the outset influenced by Karl Marx's dialectical materialist analysis of society (Blaikie, 1985) where social classes and their relations are an important focus. Marxism identifies two classes namely the proletariat and the bourgeoisie, each of which has different interests, and are therefore in a dialectical relationship (Harvey, 1996). Equally, under capitalism, both classes are in dialectical relationship with nature (Meszaros, 1970), with the dominant classes exploiting and degrading the environment more than the proletariat.

Neo-Marxists utilised the Marxism political economy discussed above as a basis for developing the dependency and world systems theories. Dependency theory applied the political economy principles at the global scale and replaced the dual class analysis with the spatial concept of centre-periphery. The theory argues that poverty in the third world is a product of their integration and dependence on the capitalist metropolis (Frank, 1969; Cardoso, 1972; Amin, 1976; Rodney, 1973; Greenberg and Park, 1994). It is proposed that large companies that invest in mining, plantations and manufacturing industries syphon resources at a cheap price from the global south and sell processed goods back into the south at a high price (Rodney, 1973; Harvey, 1996).Thus, an elite class in the metropolitan countries benefits from the labour and resources of the peripheral countries (Harvey, 1996). Immanuel Walleinstein (1974) developed dependency theory and proposed world-systems theory. Here, the world economic system is proposed as being characterised by division of labour and a global market (Shannon, 1989). In this system, surplus is generated by the proletarians (producers) and enjoyed by bourgeois (the capitalists) at a global scale (Wallenstein, 1974). Greenberg and Park (1994) criticise the political economy approach for reducing everything to social constructions and disregarding all that is not human, i.e. the natural world.

As presented above, the foundation from which political ecology first emerged in the 1970s was defined by the confluence of the theories of cultural ecology and political economy on one side and ecology on the other. Political ecologists therefore focus on unequal power relations, conflict and cultural 'modernisation' under a global capitalist political economy as critical forces in reshaping and destabilising human interactions with the physical environment (Blaikie, 1985). Hence, the understanding of political influences on people and the environment are central to the political ecology approach.

Political ecologists seeking to integrate place and non-place based analysis turned mainly to neo-Marxism in the late 1970s and early 1980s. The theorists work was diverse in nature and encompassed dependency theory, world systems theory and modes of production theory (Neumann, 2005; Biersack, 2006). Thus, from the outset, political ecologists were interested in how national or global economic and legislative processes and institutions impact on local human-environmental relationships. Most of the academic work from the 1980s onwards that focused on the interface between politics, power relations on one side versus environmental degradation on the other, was classified as political ecology (Forsyth, 2001). Although the approach had been applied since the 1960s, scholarship in the 1980s and 1990s more explicitly attempted to identify with political ecology.

The definition of political ecology has been a subject of debate among different scholars at different times. Defining political ecology is problematic as the theory draws from a number of disciplines including geography, sociology, anthropology, biology and ecology. As a result, theorists have provided different definitions of political ecology. The definition of political ecology most widely cited in the literature is that from Blaikie and Brookfield (1987). They define political ecology as combining concerns of ecology and a broadly defined political economy. According to them this definition encompasses the constantly shifting dialectic within and between society and land-based resources, and it also examines this dialectic within and between classes and groups in society. This definition is all encompassing since it is broad (Neumann, 2005; Biersack, 2006).

In defining political ecology, other scholars have focused on its contribution to 'green' environmental movements and open critique and confrontation with the capitalist system (Atkinson, 1991; Forsyth, 2003). According to Lipietz (2000: 69), political ecology is the only discipline that can claim to transform reality, on the basis of theoretical analysis, through militancy and political struggle. Thus, political ecology belongs to the critical radical theories that aim to instigate action and replace unjust world systems with justice (Kitchen and Tate, 2000). For example Atkinson (1991: 18) argues that,

> Political ecology is both a set of theoretical propositions and ideas on the one hand and on the other a social movement referred to as the 'ecology movement' or, latterly, the 'Green Movement'.

Another example of a definition for a theorythat instigates for action against unjust systems is one provided by Lipietz (2000). Lipietz (2000) uses a Marxist philosophy to produce his definition and argues that:

> political ecology, like the Marxist-inspired workers' movement, is based on a critique – and thus an analysis, a theorized understanding – of the 'order of existing things'. More specifically, Marx and the greens focus on a very precise sector of the real world; the humanity-nature relationship, and, even more precisely, relations among people that pertain to nature (or what Marxists call the 'productive forces') (Lipietz, 2000: 70).

The definitions presented above show differences in the focus of interest within political ecology. For example, while Lipietz (2000) and Atkinson (1991) focus on political ecology as a green movement, Blaikie and Brookfield (1987) focus more on the dialectical relationship between humans and nature. However, political ecology scholars agree that the perspective seeks to relate macro-level political economic processes with micro-level dynamics of human ecology (Durham, 1995; Painter, 1995; Schmink and Wood, 1987; Stonich, 1993). This thesis defines political ecology as the dialectical interaction of humans with the environment, acknowledging the role of social actors, and within the context of political economy. The definition captures the structural and cultural aspects of political ecology.

Several factors account for the changes within the approach, and some of them are discussed here. From the discussions of the emergence of political ecology presented above, it is apparent that political ecology stands at the interface of ecological and social theories, and harmonising these two traditions has not been easy. It is therefore necessary to critically discuss the ontology and epistemology and methodological assumptions that underlie this body of theory. Political ecology did not have early classical writers who to spelt out its ontology, epistemology and methodology. Scholars from various disciplines have built up the philosophy of the approach, such as Blaikie and Brookfield (1987), Bryant and Bailey (1997), Robbins (2004), Neumann (2005) and Biersack and Greenberg (2006). The remainder of this chapter will present two prevailing approaches within political ecology, namely structuralist and post-structuralist political ecology.

3.3 Structuralist Political Ecology

Early theorists of political ecology framed their theories within a structural approach to knowledge (Walker, 2005). Just like Marxists, early political ecologists argued that social relations are bound and regulated by capitalist structures and these structures serve to reproduce wealth for a minority by exploiting the broader populace (Kitchen and Tate, 2000). Within a structuralist theory or paradigm there are three levels of analysis being the superstructure, infrastructure and deep structure (Kitchen and Tate, 2000). Although those early political ecologists sought to merge cultural and human ecology and political economy in their theorisation, the latter dominated. Their analyses tended to be more concerned with the structural issues of political economy (i.e., state dynamics, colonial history, class formation, market transactions, processes of capitalist expansion and marginalisation) than with local actors embedded into the regional and local structures (Belsky, 2002). Structuralist political ecologists argued for the importance of understanding the interrelationship of humans and the environment to explain ecological degradation within a political and economic context (Walker, 2005). In this way, political ecologists explained resource depletion and vulnerability using structural inequalities at the global and class level.

Political ecology was developed initially by expanding Marxist analysis to include human-ecology relations. Karl Marx argued that nature is shaped by human labour, and the labourer is in turn shaped by the political economy (Harvey, 1974; Smith, 1984; Castree, 2001). Marx and Engels distinguished between 'first nature' and 'second nature'. 'First nature' is nature independent or untouched by human actions, and 'second nature' refers to nature that has been transformed by human society, such as the institutions of society, the market and the state (Neumann, 2005; Biersack, 2006). Under capitalism, 'first nature' has been incorporated into 'second nature' through its conversion to private property and its utilisation. Hence 'first nature' has increasingly become commodified by capitalism. Some social science theories argue that nature is socially determined (Castree, 2001; Neumann, 2005; Biersack, 2006). Political ecology also argues that nature and society are dialectically related, both influencing one another (Biersack, 2006). This argument goes against environmental determinism which is largely positivistic in its analysis and proposes that the environment determines human action.

In this early period, the research questions posed by political ecologists were framed in Marxist and neo-Marxist thinking (Greenberg and Park, 1994; Neumann, 2005). From the 1980s political ecology scholars raised important questions such as: Why is it that the third world seems to be permanently plagued by environmental crises? Why is there environmental degradation? Why is it that people who are most affected by environmental disasters like droughts, floods, landslide and others are the poor? Who benefits from wildlife conservation and who loses? Political ecologists addressed these questions by demonstrating in their research that environmental problems were not purely demographic, scientific and technological, but fundamentally and thoroughly social and political (Neumann, 2005).

In this earlier period, the work of political ecologists formed a nexus for social science theorists who sought to understand the linkage between nature and society. Using a structuralist framework they argue that the socio-historical character of power lies at the centre of all analysis (Biersack, 2006). History is important for political ecology analysis since it is a critical theory that is based in dialectic materialism in explaining social change and social processes over time and stratification (Atkinson, 1991; Biersack, 2006). They argued that local level analyses were inadequate and village level ecology was not complete

until the village is set within the 'wider' natural and global political economy (Greenberg and Park, 1994; Peet and Watts, 1996; Goodman and Leatherman, 1998). This perspective blamed the structures of domination at the global level for ecological degradation at the local level. This argument was based on dependency theory and consequently, much of the blame for environmental degradation was attributed to capitalism, the dominant forces of which are located in the north.

The world view of structuralist political ecology is summarised in Biersack's (2006) essay.

> As an extension of political economy, political ecology offered a structural perspective, emphasizing the causal relationships between society's economic base- the form of production and the associated class structure and the legal institutions and administrative agencies of the state. This structural perspective differentiated powerful from weak actors those associated with private accumulation, who own the means of production and to whom the state tended to cater on one hand, from the marginalised, poorer groups which would be victimised by capitalism's self-interested, ruthless rationality on the other (Biersack, 2006: 12).

Political ecology proposes that the complex web of human interactions is constantly in a dialectical relationship with the natural environment. The assumption in political ecology therefore is that the environment is influenced by local people who are subordinate in the global system of power relations, hence the actions of local people should be understood with respect to their subordinate position created by penetration of capital (Biersack, 2006).

Structural political ecologists focused on probing how the politics of access to and control over land and resources were related to environmental change (Neumann, 2005). Structural political ecologists focus their research on how and why institutionalised discourses of environmental change come into place, and on finding alternative, more inclusive, ways of addressing environmental problems (Forsyth, 2008). For example, one of the prominent early political ecology theorists, Blaikie (1985) argued that capitalism extracts surplus from peasants and pastoralists, who then, over-utilise their natural resources in their need to make a livelihood. This entails taking resources from the soil, pastures and forests that they cannot

put back. Thus, ecological degradation is explained as the product of the marginalisation of poor people who are left to their own means to survive.

Thus ecological degradation of the natural environment became understood from another framework with the advent of structural political ecology. This more often than not contradicted the dominant viewpoints of understanding nature provided by the natural sciences in dealing with environmental problems. Here nature is assumed to be apolitical (Fairhead and Leach, 1996; Robbins, 2003; Turner, 2004), and analyses were restricted to the observations of the natural phenomenon in question. Natural scientists rely heavily on positivist methodologies and their knowledge is obtained through carefully and objectively collected and analysed data in order to produce laws and theories of cause and effect (Kitchen and Tate, 2000).

The central methodological question in positivist scholarship is whether knowledge is accurate, representative and replicable. Meanwhile, the relativism of the constructivist paradigm is concerned with the following questions: What reality is being created, by whom, for whom, for what political purpose and to what political effect (Biersack, 2006: 14). Social scientists generally agree that knowledge is not neutral or theory-free. Marxists argue that the knowledge of nature is implicitly and explicitly reflecting the wider class interests of the most powerful groups in western and non-western society (Harvey, 1996). Neo-Marxists have extended the issue of knowledge generation to indicate how it serves the interests of gender, race and colonialism (Nesmith and Radcliffe, 1997). According to Castree (2001), Marxists use the term ‘ideologies of nature’ to refer to dominant environmental discourses such as ‘water scarcity’. They propose that these ideologies hide the truth and serve interests of powerful individuals, groups, classes and states (Castree, 2001). The Marxist and neo-Marxist explanations of knowledge gradually became questioned by the post-structuralists with the ‘interpretive turn’ of the 1990s (Mottier, 2005).

Structuralist political ecologists claim that reality is not an object, but in some measure a human artefact. According to Biersack (2006) this claim carries great weight in the social and human sciences today. Structuralist political ecology presents an ontological argument that

nature is real although dependent on humans to some extent and therefore it is not totally constructed by humans (Blaikie, 1985). Biersack (2006: 27) argues against the position that there is no nature, only the constructed nature. He says that this view "… has little appeal for most political ecologists, for whom the stakes must be real and material if they are to be fully political". This structuralist argument continues to support the concept of 'first nature' as the parameter of political ecology analysis, while the post-structuralists propose that the humanised nature is important and argues that nature and culture are inseparable. It is this position that has been the point of difference between structuralist and post-structuralist political ecology.

3.4 Post-structuralist Political Ecology

Towards the end of the 1980s scholarship that proposed the structural analysis of society was criticised by scholars who promoted the role of human agency in social sciences. Agency is defined as an active person, i.e. an individual who can be active and passive, both an agent and a subject of experiences (McDonald, 2010). According to the post-structuralism, structuralist theories over-emphasise the causal power of the economy and political systems and fail to include human beings as complex active agents in shaping themselves and the environment around them (Johnston, 2006). Increasingly, social sciences scholarship has been shifting from structural analysis to cultural analysis and this has been termed the 'cultural turn' (Johnston, 2006). Rabinow and Sullivan (1987) termed the shift from structuralist analysis to actor and agency centred analysis as the 'interpretive turn' in social sciences. According to Johnston (2006: 10),

> It became known as the 'cultural turn' not only because it drew much inspiration from cultural theory and the burgeoning multidisciplinary enterprise of cultural studies but also because it sought to break down the barriers between different 'types' of geography – such as economic, industrial, political, urban etc. – into an awareness that common human traits and behaviour patterns ('culture') underpin most (if not all areas) of life and thus are inscribed in spatial structures which constrain and yet facilitate further action.

The ‘cultural turn’ resonated in scholarship within the post-structuralist and post-modernist paradigms, which promoted the role of individual agency. The basic assumption of post-structuralist theory is that analysis of the production of social reality includes the analysis of representations as social facts, inseparable from what is commonly thought of as ‘material reality’ (Escobar, 1996). Furthermore, post-structuralism assumes that meaning is produced in language and not reflected by it and it is neither static nor universal amongst social agents (Kitchen and Tate, 2000). Furthermore, the role of language in the construction and deconstruction of reality is deemed critical with language not being taken as a reflection of reality but as constitutive of it (Escobar, 1996). Hence,

> “Problems of meaning, discourse, aesthetics, value, textuality, and narrativity, topics traditionally within the humanists’ purview, are now coming to the fore as social scientists emphasize the importance of meanings, symbols, cultural frames, and cognitive schema in their theorizations of social process and institution (Friedland and Mohr, 2004: 1).

According to Kitchen and Tate (2000: 17), “Therefore, if we are to understand the relationship between space and society we need to explore the positioning of an individual in relation to language and how the individual is conFigured by language”. The post-structuralist paradigm has similarly influenced a range of disciplines within the human sciences.

Political ecology has not been immune to the ‘cultural turn’ in social sciences. This has led to the dichotomy of political ecology into a structuralist and a post-structuralist approach. Unlike the former, that assumes the existence of truth about nature to be ‘out there’ and reducible to ‘natural laws’, post-structuralist political ecology assumes that “scientific knowledge is made in historically situated practices, rather than ‘found’ (Castree and Braun, 1998: 27; Mottier, 2005). According to Biersack (2006), the line between the two blurs in light of the revolutionary claims of post-structuralism. A number of prominent structural political ecologists have shifted to post-structural analysis; examples include Escobar (1996), Biersack (2006), Blaikie (2008) and Forsyth (2008). In a special issue of *Geoforum*, volume 39 of 2008, published in honour of Blaikie, numerous authors noted that his work had made

contributions to structural political ecology first and then he shifted to post-structural political ecology (Bryant and Goodman, 2008; Forsyth, 2008).

Recently, political ecologists have been promoting the adoption of post-structural paradigm as a framework of analysing the relationship between human agents, structure and environment (Escobar, 1996; Biersack, 2006; Bryant and Goodman, 2008). Post-structural political ecology insists that the knowledge constructs of political economy and ecology must be understood discursively (Escobar, 1996).

Biersack (2006) proposes that structural and post structural political ecology show five differences in their theoretical orientation (Biersack, 2006). Firstly, as presented above, the structural political ecologists focus their analysis on societal structures and in the process they differentiate symbolic from material factors and tend to reduce the one to the other (Lipietz, 2000; Biersack, 2006). Post-structuralist political ecologist critique structuralist simplicity and focus upon the nexus of the interaction of symbolic and material factors and how they shape one another (Biersack, 2006). According to Biersack (2006: 4), "political ecologists today recognise that reality, insofar as it is invested with meaning, is produced 'discursively' through signifying practices of various sorts."

Secondly, structural and post-structural political ecologists differ over the issue of the separation of nature and society especially its cultural dimension (Castree, 2000). Structural theorists argue for the separation of nature and culture, putting more emphasis on effects of structural systems on nature (Harvey, 1996; Lipietz, 2000, Neumann, 2005). Post-structural political ecologists contend that nature and culture reciprocally impact on each other (Biersack, 2006). Hence, post-structuralists use such terms as second, social or humanised nature to signify nature that is the by-product of human conceptualisation, activities and regulations (Castree, 2001; Biersack, 2006). Thirdly, structuralist political ecology uses world systems theory as a framework of analysing human-nature relations and overlooks the local level (Castree, 2000). Post-structuralist political ecologists consider the local-global dynamics in their analysis (Biersack, 2006).

Fourthly, post-structural political ecology focuses on the constraints of the structures but also on the indeterminacies of agency and events (Biersack, 2006). While on the other hand structural political ecology tends to focus on structural systems, and is silent on the individual actors and their agency. Lastly, a post-structural political ecologist attends to a wider spectrum of structural differences such as gender, race and ethnicity, unlike the structuralists who focus mainly on the classical Marxist analyses of class (Biersack, 2006).

Scholarship within post-structuralist political ecology can be divided into scholars who use discourse analysis and those using constructivist analyses. Some post-structuralist political ecologists utilise discourse analysis to understand social and scientific constructions of nature (such as Escobar, 2001 and Forsyth, 2008). Escobar (1996: 46) defines discourse as the process through which social reality inevitably comes into existence. Political ecologists who utilise discourse analysis examine "biodiversity" not as a true object that science progressively uncovers, but as a historically produced discourse (Escobar, 1998; Bryant, 2001). This perspective argues that the world exists independently of human knowledge about nature, which then means that human knowledge is not 'the truth' but a representation of it (Neumann, 2005). The assumption is that an appreciation of everyday processes that shape people's practical lives necessitate an analysis of discourse, since questions of material or lived realities are inseparable from the ways in which that reality is represented (Bryant, 2001: 162). In other words, nature is created only through being given meaning, symbolised and expressed in language and people live in this created nature every day.

Post-structural political ecology theorists who utilise discourse analysis in examining the relationship between nature and society, in this example, the concept of biodiversity, presuppose that,

> Although 'biodiversity' has concrete biophysical referents, it must be seen as a discursive invention of recent origin. This discourse fosters a complex network of actors, from international organisations and northern NGOs to scientists, prospectors, and local communities and social movements. This network is composed of sites with diverging bio-cultural perspectives and political stakes (Escobar, 1998: 53)

Post-structural political ecologists who utilise discourse analysis draw from the contributions of Foucault[16]. Richardson (1996) presents Foucault's argument that discourse is the medium through which power and knowledge are organised. Foucault argues that knowledge and what is held as the truth in society cannot be separated from power; powerful social institutions are thus associated with their own specific regimes of knowledge (Robbins *et al.,* 2010). Richardson (1996) proposed that research should focus more on asking how, why and by who a discourse is produced, instead of focusing on seeking the 'truth' of an argument (Richardson, 1996). Based on these assumptions, critical political ecology is an approach that "eschews meta-narratives or received wisdom about environmental degradation, and instead adopts a critical attitude to how such supposedly neutral explanations of ecological reality were made" (Forsyth, 2003: 267). This entails the scrutinising of ecological causality and truths, and understanding the political contexts in which they were formed.

Post-structuralists apply discourse analysis to understand the dominant or competing discourses that shape nature. The argument is that ideas about ecology actively shape human perceptions and utilisation of nature, hence the importance of the contested definitions of nature (Bryant, 2001). In this view, natural scientists only attempt to describe and give order to nature and their accounts are not the reality or truth (Williams-Braun, 1997; Castree and Braun, 1998; Neumann, 2005). Escobar (1996) associates the power of scientific discourse with capitalism. Capitalism relies on scientific knowledge in order to exploit the potential commercially valuable properties of nature. Scientists not only provide the knowledge, moreso they develop technical equipment to exploit the natural resources through this process of exploitation. Local communities are often displaced and end up utilising marginalised lands. For example, the construction of large dams displaces communities who are usually not compensated, but driven to marginal lands (World Commission on Dams, 2000). According to Neumann (2005: 50), "Political ecologists have adopted Bhaskar's (1975) schema of the 'real', 'actual' and the 'empirical' as a means of exploring scientific ordering of knowledge". The world is constantly reconstructed as new phenomena come into being through the emergence of new realities. Thus, the world exists 'out there' independent of

[16] Michel Foucault (1926-1984) was famous for his philosophical theories which addressed what power is and how it works, the manner in which it controls knowledge and vice versa, and how it is used as a form of social control. Foucault (1980) notes that individuals are the vehicles of power, not its point of application, hence sovereign power is anchored on extension of the state through internalisation and individuals submitting to the state as subjects.

human knowledge of it, hence, human knowledge is not reality but its representation of it (Neumann, 2005).

Since the cultural turn in social sciences, a number of post-structuralist political ecologists use discourse analysis to map the way in which knowledge and power interrelate so as to mediate political ecology outcomes (Escobar, 1996; Bryant and Bailey, 1997; Bryant, 2001). Escobar (1996) argues that discourse analysis is important in political ecology as it interrogates the way ideas are developed and understood by different actors, and how attendant discourses are developed to promote or block specific actors' interests. For example, some post-structural political ecologists have interrogated the discourses around the idea of a 'park' and 'wilderness' (Neumann, 1996; Olwig, 1996; Robbins, 2004). Furthermore, post-structural political ecologists explore the implications of the dominant scientific discourses around forestry degradation and soil erosion policy and local practices (Bryant, 1996).

While the other school of post-structuralist political ecology, namely the constructivist school, does not use discourse analysis but uses social constructivism in their analysis to understand the social construction of nature. Social constructivism assumes that the actor's experiences and interpretations of signs and images act to construct their representations of people and objects (Terre Blanche and Durrheim, 1999). Reality or the truth at any given time, is therefore a product of a particular set of social relations, experiences and understandings. The 'truth' is thus constructed and reconstructed by those actors who interact with the phenomenon in question over time. It therefore follows that in this approach, nature too is socially constructed. Robbins, *et al.,* (2010) argue in relation to National Parks that,

> The National Parks itself is a construct, rather than a fragment of raw, asocial nature, captured and protected … the entrance fees, maintained roads, hiking trails, limits on indigenous uses, interpretative exhibits, and forest management practices - all of these together construct the very nature that we expect to see when we visit such parks (Robbins, *et al.,* 2010: 118).

According to Robbins, *et al.,* (2010: 120) in relation to this case, it becomes important to ask, "What unspoken assumptions are buried within ideas of authenticity, protection, and wilderness?" This is to associate the constructions to some power that influences the interaction of social agencies with the material world. The social constructionist approaches to human-nature interaction assume an additional dimension to that of cultural ecology in that it does not only concern itself with discourses but includes the theorisation of the social institutions to which these discourses are tied.

Forsyth (2003) noted that most political ecology scholarship does not elucidate what is meant by 'ecology' or 'environment' or 'nature' in their work. Increasingly, post-structuralist political ecologists argue that there is no objective reality as assumed by positivist natural sciences, and thus there is no such thing as the truth or 'real' nature. Robbins, *et al.,* (2010) argue that, despite the fact that some knowledge of nature has been derived from authoritative scientific research, such knowledge is still a social construct, because the methods by which they are derived upon are social concepts and are embedded in a social context. Furthermore, it is argued that scientific data has to be connected to hegemonic institutions in order to gain legitimacy and to be accepted as the truth (Robbins, *et al.,* 2010). Definitions of political ecology presented by the early theorists in Section 3.2 generally refer to 'ecology' without defining this term. Robbins *et al.,* (2010) argue that nature is socially constructed as pristine and authentic due to social constructions of nature. These interpretations are not objective in themselves as they are informed by culture, media and education.

Post-structural analysis has been criticised by structuralist political ecologists. Post-structuralists have been blamed for not adequately addressing the power relations that are external to the actor's locality (Biersack, 1999, 2006). Further post-structuralists have also been critiqued for failing to account for the environment and the power inherent in nature (Biersack, 2006). Constructivism has been blamed for ignoring physical nature which exists outside human constructions (Robbins, *et al.,* 2010). Furthermore, constructivism has been blamed for leading us into relativism due to its over reliance on individual stories and experiences (Robbins, *et al.,* 2010). According to Robbins, *et al.,* (2010: 130), if knowledge of the natural world is rooted in social constructs, stories and ideologies, it becomes difficult or impossible to establish reliable information and knowledge upon which to act. This is

typical in situations of conflicting statements and one position is required for action to be taken. The question becomes what and who is to be believed (Robbins, *et al.,* 2010)

This thesis will adopt the interpretative/constructivist approach to knowledge and post-structural political ecology as the meta-theory. Thus, it is contended here that nature is socially constructed and is redefined through the dialectical interaction between humans and the environment. The researcher does not claim to be objective in the process of knowledge production because knowledge is assumed to be co-constructed in the research process between the researcher and respondents (Mottier, 2005; Biersack, 2006). The social world is viewed as a set of subjectively lived constructs, hence knowledge comes from the "subjective nature of constructions of meaning, both by the research subjects and by the researcher" (Mottier, 2005: 3). Thus, humans create their own truths and realities at particular time and in specific structural contexts, and these are legitimised through power structures. That is to say there are no policies based on universal truths but rather from various and at times competing understandings of reality. According to Blaikie (2008: 769), "Policy does not run on 'truth' as in 'one truth' anyway. In most policy-making, multiple actors, often with divergent versions of the 'truth' and competing objectives, are involved in negotiating formal policy." Thus, the only way to understand these constructed realities is by engaging with human actors in order to co-construct knowledge of their experiences and understandings with them. Constructivism therefore challenges the positivistic assumption that there is a truth 'out there' and it can be analysed objectively (Mottier, 2005; Blaikie, 2008).

Studies that adopt a constructivist approach of analysis appreciate the importance of the discursive nature of social reality (Barnett and Blaikie, 1992; Biehl, 2011; Guthman, 2011). According to Bryant and Bailey (1997) discursive formations are potentially interesting as they reveal the material practices of actors involved in social and environmental dialectics. For example some post-structural political ecology studies focus on the constructions of fishers and fishing communities, or farmers and farming communities. and how this has influenced policy (Forsyth, 2001; Minnegal and Dwyer, 2007). King (2010) analyses how denial and resultant policies of the Zimbabwean and South African governments have led to grassroots health catastrophes in cholera and HIV and AIDS patients. Furthermore, Biehl (2011) utilises the case study of Evangivaldo to draw up important themes on the experiences

of HIV and AIDS sufferers in Salvador, Brazil. Post-structural political ecologists who utilise the constructivist framework would raise the following guiding questions: What reality is being constructed, by whom, for whom, for what political purpose, and to what political effect (Biersack, 2006: 14).

Using the questions presented above, post-structural political ecologists interrogate the relationship between nature and social actors, acknowledging the influences of power structures on them. Political ecologists have largely concerned themselves with studying: environmental degradation and marginalisation of poor people, environmental conflicts, conservation and control, and environmental identity and social movements (Robbins, 2004). Scholarship on the political ecology of health has largely been ignored until recently and is discussed in the next section (King, 2010).

3.5 Political Ecology and Health

The relationships between environment, society and health have been understudied in social sciences (Barnett and Blaikie, 1992; King, 2010). This could be because health research has been predominantly perceived as being related to medical problems only, and hence dominated by medical scientists. Medical scientists and policy makers have largely adopted the 'magic-bullet' approach as the norm in dealing with health problems which is over-reliant on medical innovations like drugs or devices to restore health or manage illness (Collins, 2002; King, 2010; Biehl, 2011). This biomedical model assumes that illness has a single underlying cause, disease (pathology) is always the single cause, and removal or attenuation of the disease will result in a return to health (Wade and Halligan, 2004). Hence, health according to biomedical scholars would mean the absence of disease (King, 2012). Scholars are increasingly critiquing the 'magic bullet' approach to health, since health is influenced by many factors such as the biophysical environment, climate, political economy, gender, resources access, immune systems, social networks, culture and infrastructure (Barnett and Blaikie, 1992; King, 2010; Biehl, 2011; King, 2012). This thesis contends that human health stands at the interface of the natural environment and society (King, 2012). Hence, political

ecology will be utilised as the meta-theory in understanding the interaction of HIV and AIDS with the environment and societal structures.

The World Health Organisation (WHO) (1948) has defined health as a state of complete physical, mental and social well-being factors. This definition is not only limited to the absence of disease but also encompasses social well-being. However, the definition does not spell out the influence of political structures and institutions on health. Hence many social scientists have criticised the 'magic bullet' approach for ignoring non-medical contributions to health and healing (Wade and Halligan, 2004; King, 2010). Recent scholarship in political ecology has analysed the contributions of environment and social structures to health (King, 2010; Biehl, 2011). According to Biehl (2011) we need analytical frameworks that address the politics of both control and non-intervention, the fragmentation of efforts, and focus on the social actor as an active agent. For example, King (2010) uses the case of the Zimbabwean government's denial of the cholera epidemic in 2008 and the South African government's denial of HIV impacts to demonstrate how health issues are intertwined with politics and affect people's everyday lives. He argues that, despite health receiving some attention from social scientists, the political economy that shapes diseases and the related decision making processes have not been adequately analysed within a structural context. This blinkered approach to health ignores societal, political and economic factors that influence individual and societal health, hence value of adopting political ecology to understand health issues within the social and environmental context.

However, a review of the literature highlights that health problems are increasingly being conceptualised in relation to politics and environment. Scholars are increasingly using political ecology as a framework of analysing health issues. Examples include Barnett and Blaikie (1992), Kalipeni (1998), Harper (2005), Leatherman (2005), Richmond, *et al.,* (2005), Curtis, and Riva (2009); King, (2010); Biehl, 2011; King, 2012). Barnett and Blaikie (1992) indicated that it took them two years to attract funding for their research on the political ecology of HIV and AIDS in Uganda. According to Barnett and Blaikie (1992: 6), "… the difficulties [in getting research grant] were themselves instructive because they derived at least in part from the nature of the research topic". However, the political ecology

of health now forms an increasingly important part of disciplines like geography and sociology of health.

It is against such a background that political ecologists point to the potential of political ecology in theorising about health (Mayer, 1996; Mayer, 2000; Curtis and Riva, 2009). Mayer (1996), who is one of the first generation theorists of health geography within a political ecology framework, connects large-scale political, social and economic processes to local health and well-being. He examined the interaction of "humanity, including culture, society and behaviour; the physical world, including topography, vegetation, climate; and biology, including vector and pathogen ecology, to produce foci of disease" (King, 2010: 41). Mayer (2000: 937) theorises that "Population, society and both the physical and biological environments are in dynamic equilibrium. Significant enough stress on this equilibrium can produce cascading effects on any of the aforementioned components". Mayer (2000) uses a number of examples to demonstrate how diseases are intricately linked to their environmental conditions. He links diseases like malaria, schistosomiasis and lyme disease to their environmental contexts. Meyer (2000) argues that these diseases are a manifestation of changes in land use, migration and population pressure in Africa. He makes an important contribution by analysing the interface of human health and environment because it is at this point that vulnerability to a disease is created. However, his theorisation cannot be equally true in the case of HIV and AIDS since the disease does not have a direct causal link with the environment. King (2010) critiqued Mayer's theorisation as being narrow and lacking grounding in political economy. Harper also critiqued Mayer's theorisation, she wrote:

> …[He has] taken a top-down approach to understanding the impacts of environmental change on human health, perceiving environmental change as affecting human health but failing to extend the analysis to an exploration of the ways in which human health shapes perceptions of, and interactions with, the environment. (Harper, 2005: 298)

HIV and AIDS differ in significant ways from other diseases due to its rapid spread, the various impacts of this disease and its complex interaction with the environment (Barnett and Blaikie, 1992; King, 2012). Tony Barnett and Piers Blaikie's (1992) book *AIDS in Africa* was the earliest writing within political ecology to theorise the relationship between HIV and

AIDS, society and environment. Their work benefitted from the disaster hazard school of thought and political ecology. The disaster school of thought argues that a disaster takes place when unsafe conditions prevail on one side and physical exposure to hazard on the other side (Blaikie, *et al.,* 1994; Wisner, *et al.,* 2004; Reid and Vogel, 2006). The unsafe conditions create vulnerability amongst the people. Defining vulnerability is difficult due to the multidimensionality of the concept. Oliver-Smith (2004) notes that Wiches-Chaux (1989) identified 11 different forms of vulnerability, including natural, physical, economic, social, political, technical, ideological, cultural, educational, ecological and institutional vulnerability. Cardona (2004) defines vulnerability as an internal risk factor of the subject or system that is exposed to a hazard and corresponds to its intrinsic predisposition to be affected, or to be susceptible to damage. In other words, it is the reduced capacity to adapt or adjust to environmental adversity. Thus, the more vulnerable one is, the more intense changes in the environment will impact on the level of well-being. Blaikie *et al.* (1996) uses the term security to describe the opposite of vulnerability. Resilience is commonly used to describe the opposite of vulnerability (Coetzee, 2002). The thesis will adopt Few's definition of resilience, which refers to human capacity to minimise the impacts of that incursion through some form of adaptation (Few 2003: 51).

Barnett and Blaikie (1992) argue that HIV and AIDS is a type of a disaster, hence it creates vulnerability amongst the people directly affected by the pandemic. They argue that disasters can either be short, medium and long wave and this depends on the onset of the catastrophe. According to Barnett and Blaikie (1992: 55), "We distinguish it as a long wave disaster because the AIDS pandemic does not take the form of a discrete event with recognisable stages and responses". This means that the onset of the effects of HIV and AIDS is gradual, usually after five years, hence there is time to develop resiliency to the effects through employing known coping strategies (Barnett and Blaikie, 1992). They argue that the longevity of the effects of HIV and AIDS provide advantages and disadvantages as it gives time for the development of local and society-wide coping mechanisms. The empirical research presented in the book contextualises the households and individual responses to the impact of HIV and AIDS within the available natural resources and political economic structure of the day. An example is of female headed households whose access to land was determined by legal ownership of land at the time of death of the husband. In cases were a husband had not paid off the land, the common practices for setting pay offs was cultural

norms, legal proceedings and market forces. All these methods of setting off payments are coercive and the family loses out.

The preceding discussion focused on HIV and AIDS as a disaster. The discussion now turns to the role of the availability of resources as determinants of vulnerability to the pandemic. Barnett and Blaikie (1992) presented a seven staged heuristic model in order to demonstrate how available resources affect a household's livelihood. The model is called "access to resources and vulnerability in the face of AIDS" (Barnet and Blaikie, 1992: 63). This model proposes that every household has access to an array of resources at its disposal. These resources could be financial, social, physical, natural and human. Every household furthermore differ in its resources and family structure. Each household is viewed as intending to pursue an array of possible economic activities which will provide a livelihood for the household. The income activity selected by a household has an access qualification. Barnet and Blaikie (1992: 64) provide an example of access qualification: "… the cultivation of bananas requires access to a previously planted banana grove and the necessary labour to prune the plants, mulch the ground underneath and weed it if necessary". In a case where a family member has HIV and AIDS and is bedridden this will affect the labour supply, which is a critical access qualification. Various income activities will have different access qualifications, such as trading would require use of a bicycle as the most important access qualification. With other activities, societal norms predetermines the activity to be undertaken by a male or female, so with activities, gender becomes an important access qualification.

There are a number of variables that determine the level of proceeds obtained by the household such as crop yields, market price and margins in trade. Barnett and Blaikie (1992) observed that in Uganda, gender is also an important factor to the level of income. They noted that husbands can restrict their wives from going to trade in the market insisting that they go to trade farm produce. The women complained that when the men go to trade at the market they squander part of the money on things like beer. Power inequalities that affect access to resources have been termed as 'power and the allocation of resources', by Barnett and Blaikie (1992). The power to allocate resources operates at different levels. At the household level, the model conceives that power could be dependent on principals of gender, seniority and relationship of household members to people with financial resources and

power. At the community level, power to allocate resources is dependent on social networks, extended family and community structures. At a higher level, power to allocate resources could be determined by government, law, market forces and global political economy.

Proceeds from the income activity or livelihood strategy constitute a household's livelihood which flows into the household's budget, being it food or money. At this stage the household utilises whatever resources that would have come into the household (inflows) and these in the model are called outflows. Outflows could consist of food consumed, payment of labour, school fees and any other monies spent for the upkeep of the household. If the difference between the inflow and outflow is in surplus, then the household accumulates wealth either temporarily or may invest in further income-earning opportunities. In households directly affected by HIV and AIDS, the household budget will suffer a decline in cash and food. According to King (2010), Barnett and Blaikie's model demonstrates how resource entitlements and agricultural production are correlated and how this relationship is disrupted following an HIV and AIDS death.

Research which sought to understand the relationship of health and environment benefitted from Barnett and Blaikie's conceptualisation of vulnerability. For structural political ecologists, vulnerability is viewed as structurally created and it is therefore not considered aproduct of a stressor like a disease (Meyer, 1996; Leathermen, 2005). Poverty forces households into a more vulnerable position, which, in turn, directs them to look for other sources of livelihood in areas where security may be less and hazards more severe, or to change their resource use in ways that exacerbate vulnerability (Blaikie, *et al.,* 1994; Leathermen, 2005). Thus, applying a political ecology framework to understand the HIV and AIDS epidemic it is claiming to have interest in the conditions that shape disease vulnerability, transmission patterns, and the impacts on social and environmental systems (King, 2010). Political ecologists of health presuppose that health and disease are more than medical concerns, rather they reveal the ways in which health vulnerabilities, and the opportunities for health decision-making, are socially produced over time (Barnett and Blaikie, 1992; Mayer, 1996; Kalipeni and Oppong, 1998; Richmond, *et al*., 2005 and King, 2010). The concept of vulnerability has been refined and expanded within the post-structuralist political ecology framework (Blaikie *et al.,* 1994).

Post-structural political ecologists have enhanced the political economy framework which concentrated on the macro-scale to understand the relationship between society, health and the natural environment, by focusing at the social actor as an active agent (King, 2012b).Such a shift includes the work of Carney (1998), a structuralist scholar, who employed the term 'vulnerability context' to explain vulnerability that resulted from the socio-political context (Carney, 1998). Post-structural political ecology argues for the need to understand the 'spaces of vulnerability' and how social actors interact to create such spaces (Leatherman, 2005). Rather than focusing at the structural level, post-structural political ecologists call for analysis that does not only focus on the household but also on relationships at the intra-household and question issues such as gender, seniority and family structure that shape the impacts and experiences of people with HIV and AIDS (King, 2012). In focusing at the micro-scale, this work goes beyond the conceptualisation of poor people as vulnerable and acknowledges other factors that contribute to vulnerability beyond income or other measures of poverty (Harper, 2005; Leatherman, 2005) such as the politics of disease construction, interpretation, and representation (Guthman, 2012).

Both structural and post-structuralist political ecologists agree that HIV and AIDS affects societies differently, since it targets specific demographic groups, economic sectors, biophysical systems and regions (Barnett and Blaikie, 1992; Stillwaggon, 2006, King, 2012). This differentiates HIV and AIDS from other diseases and calls for the need to understand processes that create inequalities at the micro and macro-scale. Leatherman (2005) urged analysis to go beyond focusing on socio-economic disparities to focus on questions such as these:

> Why are some people poor in the first place, why do some get sick when others do not, and why are some able to cope with problems when others cannot. We need to ask how conditions of poverty and poor health are mutually causative and constituted; how each serves to (re)produce the other (Leatherman 2005: 50).

These questions help us to understand the context in which the social actors construct their reality. Hence, this calls for the understanding of contextually specific, spatially variable and temporally variable impacts of HIV and AIDS (Harper, 2005; Leatherman, 2005; King,

2012). Acknowledging the fact that the location of HIV and AIDS at the interface of the environment and social systems varies across time and space and allows a more complex discussion of the ways in which social actors construct their world views and experience their lives (Harper, 2005; King, 2012). According to Biehl (2011: 112) "… people create small and fleeting spaces, through and beyond classifications and apparatuses of governance and control, in which to perform a kind of 'life bricolage' with the limited choices and materials at hand." The post-structuralist political ecologists give more credit to the actor and give them agency and so focus on the minutiae of everyday life.

Unfortunately, most research on the impacts of HIV and AIDS on households has been focused on the disease as a shock which disempowers the actor (Barnett and Blaikie, 1992; Meyer, 1996; Kalipeni and Oppong, 1998: Collins, 2002). The social actors are portrayed as if they are only there to react to the shock presented by the disease and have little power to affect the disease. Accordingly, King (2012: 262) argues that,

> Theorising HIV and AIDS as a shock might obscure some of the unique dimensions of the disease, and perhaps illness more generally, for social and ecological systems. While there is a logic to theorising diseases as a shock, I argue that this emphasis produced particular, and in some cases misleading, understandings of human health, especially within the context of the HIV and AIDS epidemic.

King (2012) cites other recent studies that have demonstrated that HIV and AIDS are very unique and different from all other shocks people experience such as hurricanes, droughts and earthquakes. In a study done by Kgathi, *et al.,* (2007) relating desertification, livestock diseases and HIV and AIDS, it was concluded that HIV and AIDS differs from all other shocks because it has long-term impacts (King, 2012). According to King (2012), studies in economics, public health and demography, which carry out longitudinal studies usually refer to diseases as shocks. Research on the socio-economic impacts of HIV and AIDS has tended to reify the concept of 'shock' derived from livelihood framework and economics and assumes that the disease contains features that are large, unpredictable, and irregular (King, 2012).

HIV and AIDS have been conceptualised as shocks to the natural environment. Some scholars argue that HIV and AIDS affected households draw more from the natural environment than non-HIV and AIDS affected households (Torell, *et al.,* 2006; Kgathi, *et al.,* 2007; Sherbinin, *et al.,* 2007; Hunter, *et al.,* 2009). When an HIV and AIDS affected household's food security is under threat, residents resort to harvesting food from the natural environment and at times sell surplus in order to provide for the household (King, 2012). With the exception of the study by Frank and Unruh (2008) conducted in Zambia, most studies point to the impacts of HIV and AIDS on the environment (King, 2012).

Evidence shows that the pandemic has an impact on the reciprocal relationship between social and ecological systems. King (2012) argues that treating HIV and AIDS as a shock to the environment fails to capture its divergent and complex impacts for coupled socio-ecological systems. King (2012: 270) argues that "HIV and AIDS might be better conceptualised not as a shock that is large, unpredictable, and irregular, but as socio-ecological experience that is spatially and temporally dynamic, disproportionate, and dispersed". He argues that HIV and AIDS, unlike other shocks addressed by frameworks such as the livelihoods approach, and in hazards and economic studies, follows a unique spatial-temporal trajectory (King, 2012). HIV and AIDS takes long to be symptomatic and by the time it is, that is when the scale is magnified. Numerous factors come into play for HIV and AIDS to escalate to a critical point since it also depends on nutrition, access to anti-retroviral drugs, opportunistic infections and the particular strain of virus (King, 2012). These social and ecological processes that shape factors influencing HIV and AIDS are spatial and temporal, hence the human vulnerability to the disease is dynamic (Harper, 2005; King, 2012).

King's (2012) argument places an emphasis on the diversity of social actors affected by HIV and AIDS and the context that shapes human vulnerability to the disease. Although he provides evidence from earlier studies from southern Africa, more research is required to expose the diversity of actors' realities within the context of social and environmental systems. This thesis does accept the role of societal structures and ecological systems in creating vulnerability, but also considers the social actor's role in shaping and creating his or her own reality.

3.6 Conclusion

In conclusion, the chapter presents political ecology as the meta-theory for this study. The chapter argues that there is a dearth of research related to the political ecology of health. Hence, this chapter traced the trajectory of political ecology from its inception in the 1960s when it was framed in a structuralist framework to the more recent post-structuralist approach which focuses on the human agents and conceptualises their realities as a function of broader societal structures. The theorisation of health within political ecology was largely neglected until about 15 years ago. The most notable scholarship on health using a political ecology framework comes from Barnett and Blaikie (1992), Mayer (1996) and King (2012). However, scholarship on the political ecology of health is increasing as noted in this chapter. Political ecology is increasingly receiving attention partly because scholars are questioning why the same disease has different impacts on social actors in different contexts. The answer to such a question requires an enquiry into the environmental and social systems that shape the individual's interaction with the disease and his or her coping mechanisms for dealing with it.

Political ecology of health scholarship proposes that HIV and AIDS is a unique disease which calls earlier theorisation of health within the livelihoods, economics and demography frameworks into question. These frameworks have presented HIV and AIDS as the same as other diseases which are conceptualised as a shock on the household. Political ecologists emphasise the longevity of the shock which HIV and AIDS creates as well as its complex dialectical interaction with social and environmental systems. This study benefits from this dialectical analysis by analysing the interactions of HIV and AIDS and water scarcity and variability in the context of the Zimbabwean societal structure.

Earlier political ecologists used a political economy framework in attempting to understand the relationship between health and socio-environmental systems. However, post-structuralist political ecologists have advanced the structuralist argument by adding the social actor as an active agent and focusing on this level. Hence, for post-structural political ecologists, the interactions of HIV and AIDS at the interface of the natural environment and social systems

varies across time and space and proposes that the world views of social actors are based on their experiences of this interface. Hence, post-structuralist political ecology is a branch of political ecology.

There are a number of reasons why post-structural political ecology is applied here as a framework to inform the interpretation of data. As demonstrated in this chapter, post-structural political ecology affords the opportunity to understand the constructed reality of social actors within the framework of societal institutions. The theoretical framework analyses the connections between the natural environment and households within the context of institutional politics and power dynamics. Furthermore, post-structural political ecology is a contemporary theory, and, unlike other theories related to HIV and AIDS, it allows for the analysis of issues in the political context of the society. This study contends that the interpretation of the data by structural political ecology helps to answer the research question.

Chapter 4: Context: the Nyamakate Area

4.1 Introduction

Chapter Four seeks to construct an understanding of the contextual factors that shape the life experiences of social actors from the Nyamakate area resettlement scheme against the backdrop of Zimbabwean political and economic history. The chapter presents societal systems at the macro-level that cascade to the local-level, on one hand, and the natural environment on the other. Section 4.2 traces the inequalities in relation to land and the attempts to redress these inequalities. This section maps a trajectory in land reform policy and how it resulted in the creation and legalisation of resettlement areas such as the Nyamakate area. Section 4.3 presents an overview of the economic history and the current political economy of Zimbabwe. The thesis contends that the state of the economic system at the national level has a direct impact on the households in Nyamakate. Section 4.4 presents the governance structure of the Nyamakate area within the national context. The policies and power structures embedded in the national governance structures directly impact on everyday life in Nyamakate. Section 4.5 discusses the trends within the health sector through the presentation of health indicators. Included here is the impact that HIV and AIDS has had in reshaping the health profile of rural areas in Zimbabwe. Section 4.6 presents the context of the physical environment in Nyamakate. Section 4.7 presents the extent of water problems in detail, as this is one of the aims of this study. This section interrogates the rainfall trends and the impact of climate change on the Zambezi valley. Section 4.8 presents the socio-demographic data mainly from the Central Statistics Office and Municipality in order to provide a socio-demographic profile of Nyamakate.

4.2 The reconstruction of Nyamakate under land resettlement policy

Zimbabwe[17] was colonised by Britain in 1890 and subsequently ruled by the white Rhodesian Government after it declared the unilateral declaration of independence in 1965 (Curtin, 2008). Zimbabwe is said to be under colonialism between the UDI and 1980 (Schmidt, 1991).The prime motivation for the colonisation of Zimbabwe was the hope of finding gold, and when this did not materialise, whites turned to farming (Curtin, 2008). The colonial government enacted the Land Apportionment Act of 1930 legitimising the separation of land ownership on racial lines. Under both colonial governments, land was distributed on racial lines with the whites occupying the prime land and blacks occupying infertile lands. The extent of Zimbabwe's land is 390 000 square kilometres (Gasper, 1990). In 1979, the land was inequitably distributed, with some 700 000 black smallholders occupying 16.4 million hectares (49% of all farming land), while some 5 000±6 000 large-scale white commercial farmers occupying 15.5 million hectares (46% of the total) as shown in Figure 4.1 (Kinsey, 1999). In 1980, when Zimbabwe became independent it inherited a skewed land distribution with the minority white race owning more land than the black majority.

Besides the issue of per capita land allocation, the quality of the land and suitability for agriculture differed along racial lines. The white farmers occupied much of the central and eastern parts on the country which are characterised by good rainfall and fertile soils (Figure 4.1). The black farmers were mainly concentrated in the lowveld characterised by poor rains and infertile soils. The areas allocated to black people were prone to droughts especially in the western parts of the country (Moyo, 1995). This skewed distribution of land in favour of whites has been referred to in the literature as the 'land question' (Moyo, 1995; Muyengwa, 2009).

The 'land question' plays a pivotal role in shaping the political landscape of both Rhodesia and Zimbabwe (Masilela and Rankin, 1998). The 'land question' in Zimbabwe has its roots in the colonial period. During the colonial era, the nationalist politicians took advantage of the land issue to mobilise people to fight the white colonial government (Masilela and Rankin,

[17] The land between the Zambezi River in the north and Limpopo River in the south will be referred to as Southern Rhodesia when refering to the period from 1890 to 1980, and the same land will be referred to as Zimbabwe from 1980 to date. The country became independent from white colonial rule in 1980.

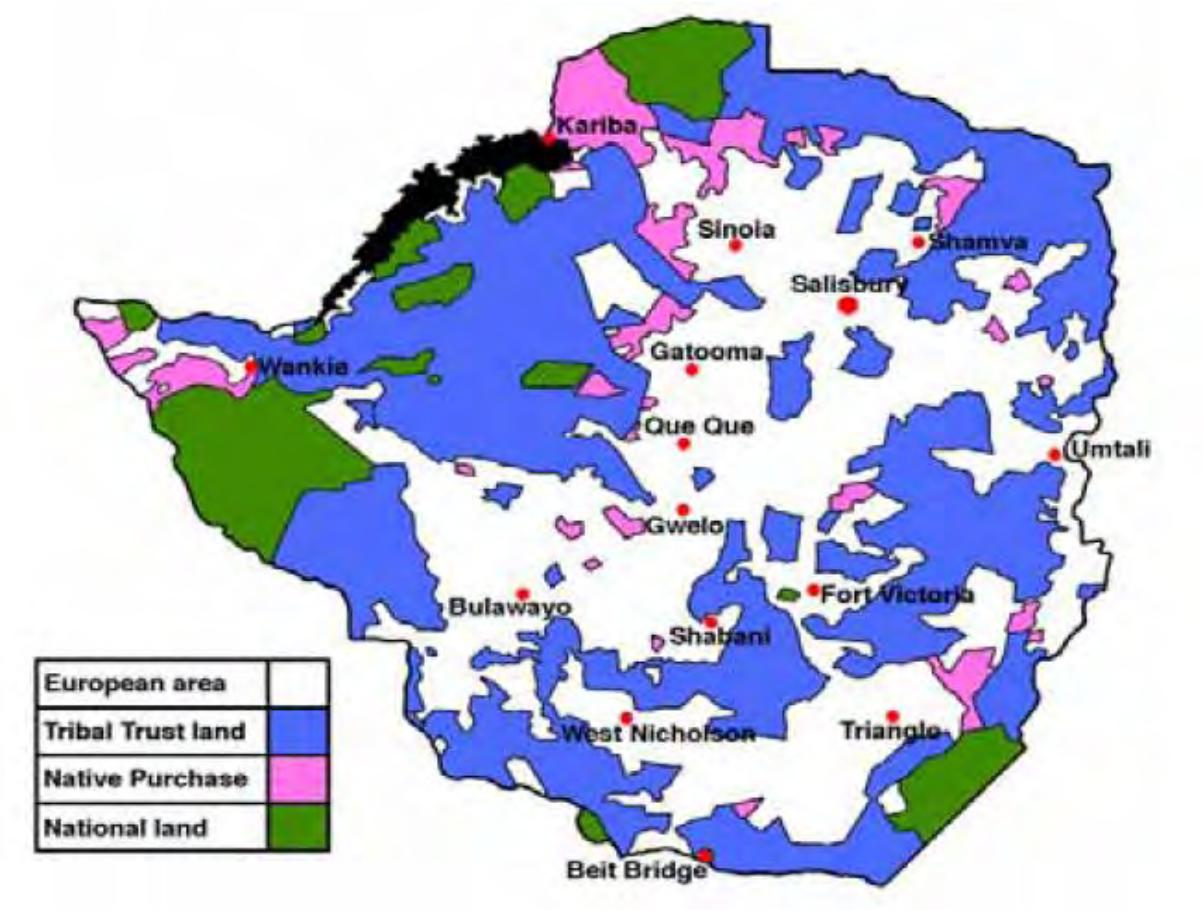


Figure 4.1 Land apportionments in Zimbabwe in 1979. *Source*: Curtin, (2008: 3)

1998; Kinsey, 1999; Moyo, 2001). After independence, the new ruling elites have used the land discourse to advance their political careers at different times in the history of Zimbabwe (Kinsey, 1999; Alexander, 2003). Alexander (2003: 83) notes that, "Since 1980, land has served as a source of political patronage … it has been central to political mobilisation and the legitimating ideology of Zimbabwe's rulers".

In 1979, the land question topped the agenda at the independence negotiations at Lancaster House. The Lancaster House talks were deadlocked for about three weeks over the land issue and almost collapsed, until undertakings were made by the British and American governments to fund Zimbabwe's land reform programme (Gasper, 1990). The Rhodesian government granted independence on condition that the Zimbabwean government would abide by the provisions stipulated by the Lancaster House Agreement (Moyo, 1995). The new Zimbabwean government, led by Mugabe, recognised the importance of the land question

and resettlement was controlled partly by the terms of the Lancaster House Agreement. Below is an extract from the terms of the Lancaster House Agreement which bound the new government from radical land reform.

> The new government would not engage in any compulsory land acquisition and that when land was acquired the government would pay promptly adequate compensation for the property. … compensation for any land seized was to be denominated in foreign currency. Land distribution would take place in terms of willing buyer, willing seller (Human Rights Watch, 2002:6).

For the period from 1980 to 1992, the 'willing buyer and willing seller' (WBWS) discourse to a large extent determined the policy of land reform in Zimbabwe.

The willing buyer and willing seller policy stipulated that the white commercial farmers had to deliberately offer to sell their farms to government. The government would then resettle landless peasants on the procured land. The state had to procure the farms at the going market price (Lahiff, 2005). Scholars have debated whether the land reform process was market or government driven. Scholars who argue for the former, question the role of the World Bank and big companies in the land redress programme (Moyo, 2001). Capitalist financial institutions supported the willing buyer and willing seller policy and provided some of the funds to buy the land. Scholars who support the latter argument, argue that the state played a very active role in land reform and not the market. Lahiff argues that the state played a central role:

> The concept of WSWB in the Zimbabwean context, therefore, represented a state-led approach, whereby land would be acquired through a mix of expropriation (effectively nationalisation) and negotiated purchase, with compensation paid at the equivalent of market prices (Lahiff, 2005: 1).

In 1980, the government targeted to resettle 162 000 families within the first five years after independence (Masiiwa, 2004). However, the government failed to achieve its goal and only managed to resettle 37% of the targeted families. Numerous scholars have interrogated the reasons for failure by government to reach its target (Masiiwa, 2004). President Mugabe is quoted by Gasper (1990: 6), as saying,

> We had wanted to resettle 162 000 families within three years, 162 000. It just proved impossible, because it was beyond, completely beyond, our management and our resources … and even if we had the resources, we just do not have the capacity to do it.

The president's analysis of the government's failure to resettle the targeted number of families highlights two important factors, which are the lack of capacity and financial resources. The British government notably provided 40 million pounds for the resettlement exercise (Masiiwa, 2004). Other institutions that contributed funds towards the resettlement exercise included the World Bank, USAID and the European Union. Some scholars agree with Mugabe's argument that the funds availed were not enough to procure the required area of land to resettle the 162 000 families (Moyo, 2001; Masiiwa, 2004). Scholars noted that, although funds to run the resettlement programme were available, they were for land development and not for the actual procurement of the land (Gasper, 1990; Moyo, 2001).

Scholars and stakeholders have increasingly criticised the willing buyer willing seller policy (Masilelo and Rankin, 1998; Kinsey, 1999, Moyo, *et al.,* 2000; Deininger and Hoogeveen, 2004). This market oriented model of land reform assumes that the farm owner wants to sell his property. This was not always the case and the government could not do anything since the Lancaster House Agreement deemed land grabbing illegal. During the first three years white commercial farmers were willing to sell their land and flee the country to Europe and South Africa. By the end of 1981, the new government managed to resettle 10 000 households instead of the 18 000 targeted, followed by 15 000 in 1982/3 (Mawowa, 2008). The pace of land acquisition and resettlement declined after 1984 as the remaining commercial farmers were no longer willing to sell the land (Deininger and Hoogeveen, 2004). This meant there was very little land on the market to buy. The government managed to resettle a further 8 000 households in the period between 1985 and 1990 (Bret, 2005).

Besides the willing buyer and willing seller process, land was also acquired through the appropriation of unused lands on commercial farms and state lands (Moyo, *et al.,* 2007). The government was under pressure from land hungry peasants who wanted to occupy unused land, on one side, and on the other side, the failure of the willing buyer and willing seller

model to acquire the required amount of land (Weiner, 1989; Human Rights Watch, 2000). This triggered the government to enact the Land Acquisition Act of 1985. This piece of legislation allowed the government to acquire underutilised land without any compensation. The acquisition of unused land was cheaper for the government since it did not have to buy the land. The invasions on unused land helped the government in the identification of unused land for acquisition (Weiner, 1989).

Although the resettlement exercise under the willing buyer willing seller policy seemed to have been organised and peaceful, sporadic illegal settlement on underutilised land did occur. Groups of black people disgruntled at the slow pace of the resettlement programme, and other political issues, unlawfully grabbed land in the mid-1980s (Moyo and Yeros, 2007). Most of the rural population expected that their land would be returned to them after independence, but at this stage it appeared that it was highly unlikely to happen (Weiner, 1989). This triggered the land invasions by landless peasants onto unused white commercial farms, the liberation war frontier zone of the Eastern Highlands, and state land (Weiner, 1989; Moyo, 2001). The people who occupied unused land without permission were referred to as 'squatters'. These groups of people were typically composed of traditional Chiefs with their subjects, war veterans and others. Moyo (2001) noted that unused state land was a soft target for the squatters to invade and settle. This led to the occupation of parks and forestry areas, mainly in the Matabeleland and Manicaland provinces. Traditional leaders and their subjects occupied land which was defined according to their Chieftaincies, from which the white government had previously evicted them (Alexander, 2003).

The land invasions were against government policy. The government contended that equity, conservation and productivity could only be ensured by state control over settler selection and good technical planning (Alexander, 2003). The issue of land invasions was exacerbated by the contradictions between government policy and the needs of grass roots rural people. The people envisioned independence to mean radically reversing the colonial land imbalances through land grabbing (See Alexander, 2003). According to Alexander (2003: 87) "… a rift opened between people and their elected representatives in the district

[Chimanimani district[18]], and between both of these and the national government". Between 1980 and 1982, the government treated the squatters in Chimanimani and other parts of the country cautiously. It was during this period that people occupied the Nyamakate area as squatter[19] (Interview 42, 16/06/2011). The Nyamakate case also benefited from the Provincial Administrator's attitude towards squatters. According to Alexander (2003), the Mashonaland West Provincial Administrator defended the squatters on moral grounds. Squatting was justified on the basis of the acknowledgement of the resourcefulness, productivity and tenacity of the war veterans and landless peasants.

After 1985, the government discourse redefined the squatters and labelled them as criminals disruptive to orderly governance, environment and economy (Alexander, 2003). This made it hard for the squatters to access ministers, politicians or to be selected as candidates for formal resettlement. A lot of brutality was exercised in order to drive out the squatters. White commercial farmers responded to squatters by taking legal action in order to get eviction orders. The brutality with which these squatter evictions were carried out, both by police and white farmers, was reminiscent of colonial era evictions carried out in the decades prior to independence (Yeros, 2001 in Moyo, 2001).

In most cases, squatters would be resettled on any farm available for resettlement in the country, however there were few cases where squatters were resettled *in situ* (Moyo, 2001). In a few cases, the government conceded to the squatters and ended up resettling them on the land and granting them the right to occupy the land. The formalising of squatters was called 'normal intensive land reform'. According to Weiner (1989) about half of the people who ended up being resettled had started out as squatters. The squatters put pressure on the government since they settled on private property and this had dire economic consequences (Weiner, 1989). The Nyamakate resettlement is one of the few exceptions where the government officially resettled squatters using the 'normal intensive land reform' model. The Nyamakate resettlement was therefore created after people invaded the unused land rather than through the willing buyer and willing seller scheme. The Nyamakate land was left

[18] Chimanimani district is located in south-eastern part of Manicaland province see Figure 4.3 for the location of Manicaland province.
[19] See Chapter 8.2 for detailed discussion of the process of resettling people in the Nyamakate area.

unused during the colonial era as it was infested with tsetse fly. In addition it acted as a buffer zone for wild animals that escaped from the adjacent Marongora game park (Interview 5, 23/08/2011). Very little is documented on the history of the Nyamakate resettlement process. The Nyamakate resettlement took place in two phases. In the first phase, the resettled villages were named according to the Roman alphabet (from Alpha to Quebec). In the second phase, the resettled villages were numbered from village 20 to village 32[20].

4.3 Economic Context of Nyamakate

4.3.1 The Good Times: 1980-1990

The economic activities of the Nyamakate community members need to be contextualised within the framework of the national economy. This thesis contends that grass-root economic activities are to a large extent shaped by the national economic policies and the current economic crisis. The newly created government of Zimbabwe in 1980, headed by President Mugabe, inherited one of the most structurally developed economies and effective state systems in Africa (Brett, 2005). From 1980 to 1990, the new government engaged in a macroeconomic policy compromise that sought to balance redistributive welfarism on one hand with the protection of capital interests on whose material base the former relied (Moore, 2003; Mawowa, 2008). Yash Tandon describes the Zimbabwean macroeconomic policy o within the first decade as 'schizophrenic state' (cited in Mandaza, 1986: 14). The Zimbabwean government economic policy for the first decade was informed by the ideology of 'growth with equity' which was in line with the socialist, egalitarian and democratic principles pursued by the government (Zimbabwe Government, 1990; Mtapuri, 2008). The subsequent policies, namely the Zimbabwe Transitional National Development Plan of 1982-1985 and the Zimbabwe First Five Year National Development Plan of 1986-1990, shifted the emphasis towards poverty alleviation.

The Zimbabwean economy had a short-lived boom of 10% per annum between 1980 and 1981. The economic growth was short lived, and the average GDP for the first eleven years after independence was 4.3% per annum (Bret, 2005). From 1980 to 1990, the manufacturing

[20] See chapter 8.2 for an account of the history of the Nyamakate resettlement as revealed by those who were resettled.

volume index and employment grew by 138% and 12.4% respectively. The annual inflation rate in 1990 was 12% per annum. There was optimism amongst the international community, academics and others about the potential of the Zimbabwean economy to continue growing (Brett, 2005). About 40% of the population in 1990 were living below the poverty line and the country was ranked 111 on the UNDP Human Development list (ZHDR, 2000; Sachikonya, 2002). Between 1980 and 1989, export growth increased by 3.4% (Sachikonye, 2002). A cause for concern to the government and international community was the rising debt service payments, which had risen to 34% of export earnings by 1987 (Mawowa, 2008). Although the economy was still one of the strongest in the region, the desire to ensure economic growth led in 1991 to the adoption of the structural adjustment programme (Mawowa, 2008).

Besides the rising international debt, the Zimbabwean economy was performing very well within the first decade from 1980 to 1990 (Sachikonya, 2002; Bret, 2005; Mawowa, 2008). Despite the good economic performance, investment into small scale agriculture was decreasing especially in the late 1980s despite its potential to promote economic growth (Kinsey, 1999; Moyo, 2009). The small scale communal farmers, who were predominantly black, had been improving in grains and cotton production from 1980 to 1990 (See table 4.2 in section 4.3.2) (Leared and Trejos, 2010). According to Kinsey (1999), although there was evidence that small scale farming could be a very powerful source of economic growth, it was neglected partly due to lack of political will and suspicion that the resettled farmers were not productive. Moyo (2009) summarises the issue of investing in small scale communal farming by government or private sector. According to Moyo (2009: 357),

> During the early 1980s, the Agricultural Finance Corporation (AFC) of Zimbabwe provided credit for development and working capital under its Farm Input Credit Scheme and Resettlement Credit Scheme (FICSRCS) through loans in the first year of settlement. Start-up grants to cover part of a beneficiary's initial production needs were provided. But those funds dried up by 1987. Private sector financial institutions were not keen to provide credit to beneficiaries [small scale farmers]. Informal sector financial institutions, which could act as rural financial intermediaries, were hardly involved.

The government deliberately neglected small scale farming as demonstrated by limited investment into the sector.

4.3.2 The Times of Change: 1991-1998

The fortunes of the national economy started turning after 1991 with the introduction of the economic structural adjustment programme (ESAP). It should be noted that the Zimbabwean government had attempted to resist the persuasion by the International Monetary Fund (IMF) and World Bank (WB) to introduce ESAP (Bhalla, *et al.,* 1999). This was mainly due to the realisation that ESAP was not pro-poor and lacked a social welfare dimension (Bhalla, *et al.,* 1999). However, the retarded growth of the economy pushed the state to accept ESAP (Mawowa, 2008). The state carried out widespread reforms which were in line with WB and IMF requirements. These included the relaxition of government controls on import tax; provision of credit to business, foreign exchange regulations, opening up parastatals to competition by private sector, budget deficit reduction; and deregulation of prices, wages, transport and investments, and labour (Bhalla, *et al.,* 1999; Bret, 2005). These market determined reforms were thought to be essential to promote the volume and efficiency of private sector investment, improve international competitiveness, increase efficiency in production and to lead to the expansion of exports (Mawowa, 2008).

The first outcome of the ESAP was to replace the government centred policies pursued since 1980 with a market oriented macro-economic policy. The ESAP left every stakeholder dissatisfied with the exception of the new 'financial tycoons' of a bourgeoisie class (Mawowa, 2008). "Financial liberalization and tight credit policies meant higher interest rates on domestic debt (up to 30%); currency devaluation, increased foreign debt payments; [and] firm closures reduced tax-take" (Carmody, 1998 as cited by Mawowa, 2008: 45). The Economic Structural Adjustment Programme created more problems as poverty deepened, unemployment increased and social services collapsed (Tekere, 2001). Subsequently, the percentage of people living below the poverty line increased from about 40% in 1990 to 61% in 1995. The GDP averaged 1.5% per annum during the period 1991-1995 (Tekere, 2001).

The ESAP was reviewed in 1996 by both the WB and the Zimbabwean government. The results indicated that some of the targets set had been achieved and others not, but beyond

doubt the economy and social consequences of the ESAP had been disastrous (Table 4.1). Some of the key indicators such as inflation had risen dramatically especially between 1991 and 1992 when it rose from 39.7% to 46.3% (Table 4.1). The total revenue expressed as a percentage of the GDP did not show much significant change. With the exception of 1994, the gross domestic product was lower than the target. On a positive note, total exports increased from $1642 million in 1991 to $2718 million in 1995, and this surpassing the target of $2593 million for the same period. However, government deficit was volatile and its lowest mark was -12.2%, which meant government had to reduce expenditure on essential social services like health, sanitation and education (Mawowa, 2008). The ESAP had negative social impacts on the poor since GDP declined versus high inflation rates, and efforts to develop pro-poverty alleviating programmes failed (Bhalla, *et al.,* 1999).

Table 4.1 ESAP targets and actual performance of the economy. *Source:* ESAP, Ministry of Finance and Economic Development (1998: 37)

Indicator	1991		1992		1993		1994		1995	
	Target	Actual	Target	Actual	Target	Actual	Target	Actual	Target	Actual
GDP (%)	4.3	3.2	4.4	-5.5	4.6	2	4.8	5.3	5	-0.2
Exports US$m	1825	1642	1982	1527	2159	1625	2363	1969	2593	2718
Imports US$m	1606	1564	1746	1776	1860	1526	1986	1798	2115	2882
Overall balance US$m	136	-103	114	-32.7	123	208.3	108	270.5	114	44
Total revenue as % of GDP	39.3	33.5	39.6	35.7	39.2	31	38.9	30.4	38.3	30.1
Total expenditure as % of GDP	46.9	42.7	45.7	44.1	44	41.4	42.6	38	41.5	42.4
Govt deficit as % of GDP (Excl Grants)	9.3	-9.2	7.8	-8.4	6.6	-10.4	5.5	-7.6	5.0	-12.2
Inflation (%)	16	39.7	14	46.3	12	18.6	10	21.1	10	22.6

The government implemented another policy called the Zimbabwe Programme for Economic and Social Transformation (ZIMPREST) in 1996 to supersede ESAP (Brett, 2005). ZIMPREST continued the thrust of the ESAP to implement liberal macro-economic and structural reforms. However, it gave more attention to social development by focusing on poverty, empowerment, indigenisation and land reform (Government of Zimbabwe, 1998).

Besides the initial growth in GDP by 11.9%, ZIMPREST failed to bring in any meaningful economic growth. In 1998, the manufacturing sector shrunk from contributing 22.8% of GDP in 1996 to 17.1% (SAPES, 2002). Between 1990 and 1999, the average national GDP for the period was 0.9% per annum with a record low employment growth of 0.4% per annum (Macro-economic paper for Zimbabwe Institute, 2007). The decline in these economic indicators had dire consequences for the people in the country.

By the end of the ESAP in 1996, Zimbabwe was estimated to have a population of about 11.7 million with about 67.5% of its population residing in rural areas (SAPES, 2002). By 2000, the country was estimated to have 12.6 million people with 65.4% of its population residing in rural areas (SAPES, 2002). Thus, population growth was growing at a faster rate than the economy and agricultural production, resulting in widespread food insecurity. Poverty surveys indicate that poverty and food insecurity in Zimbabwe is highly concentrated in the communal and resettlement areas, and it was increasing in the 1990s (Poulton, *et al.,* 2002). For the purposes of this research, it is important to understand the impacts of the ESAP on small scale agriculture so as to contextualise the experiences of the Nyamakate households, which depend largely on agriculture for their livelihoods.

The agricultural sector was liberalised in 1990 for the first time since independence. This entailed reductions in subsidies for inputs and equipment, incentives for producing crops for export, relaxation of the regulation that the government marketing board be the sole buyers of cotton and grains; and the de-regularisation of agricultural inputs by government (Bautista and Thomas, 2000). The ESAP resulted in the decline of agricultural extension services as there were no resources to invest in such social services (Eakin, 1993) with dire consequences for small scale farmers such as those in the Nyamakate area. The increased sales from communal and resettled farmers increased in the 1980s but then stagnated in the 1990s (Table 4.2). The use of fertilisers in communal and resettlement agriculture reduced in the 1990s because of the high prices of the commodity, made worse by the removal of government subsidies (Bautista and Thomas, 2000). This, coupled with the 1992 and 1995 droughts, reduced agricultural production in the communal and resettled areas which led to an increase in poverty levels.

Table 4.2 Shares in value of crop sales through the marketing authorities. *Source:* Central Statistics Office (CSO) (1998)

Agricultural sector	*Shares in value of crops by year (%)*									
Year	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Communal	5.9	10.9	11.8	9.2	14.2	20.8	18.8	14.1	22.0	19.3
Commercial	94.1	89.1	88.2	90.8	85.4	79.2	81.2	85.9	78.0	80.7
	100	100	100	100	100	100	100	100	100	100
Year	1990	1991	1992	1993	1994	1995	1996	1997	1998	
Communal	12.4	9.2	3.7	25.5	18.4	5.3	15.5	16.2	14.9	
Commercial	87.6	90.8	96.3	74.5	81.6	94.7	84.5	83.8	85.1	
	100	100	100	100	100	100	100	100	100	

Table 4.2 demonstrates that commercial farmers continued producing significantly more than the communal areas over time because of access to credit facilities and export markets (Pazvavambwa and Hungwe, 2009). Farmers used to access loans at 5% interest rate, and the loans were accessed through the Agricultural Finance Corporation (Pazvakavambwa and Hungwe, 2009). During this decade agriculture remained the dominant economic activity for the Nyamakate community. Besides agriculture, other economic activities such as informal home industry and selling vegetables to neighbouring towns were emerging (Mawowa, 2008). There was and is also a strong reliance on remittances from household members in urban areas (Bracking and Sachikonye, 2006).

4.3.3 The Crisis Times: 1999-Present

The economic situation after 2000 until the 'dollarisation' of the economy in 2008 can be described as a disaster as the country plunged into an economic, social, health and political crisis. The Zimbabwean economy shrunk by about 62.6% between 1999 and 2008, a trend typical of a country at war (Makochekanwa, 2009). There are debates between scholars as to what caused such a rapid economic and political meltdown. Bond (2007) summarised the various proposed triggers to the crisis as follows: 'Black Friday' when the currency lost 74% of its value in four hours in November 1997 authorisation of land invasions in February 2000 pensions awarded to the war veterans, the deployment of troops by Mugabe into the Democratic Republic of the Congo to back the Kabila regime and secure investment sites, the crash in the stock market interest rates which were raised to high real levels at the outset of the Economic Structural Adjustment Programme (ESAP), the coming in of an inexperienced

government led by Mugabe, or the decline of per capita Gross Domestic Product (GDP) around a fall that has not yet reversed itself. Bond (2007) argues that all the above events contributed to the crisis in their own way. It is important to understanding the political and economic crises in Zimbabwe so that one can infer the impacts of this national crisis on rural communities, such as Nyamakate.

The average annual GDP for Zimbabwe in 2005 was -5.5% (Macro-economic paper for Zimbabwe Institute, 2007). According to the Zimbabwe Poverty Assessment Survey in 2003, Zimbabwe's Total Consumption Poverty Line (TCPL) for rural dwellers was Z$29 320 per capita per month. Mashonaland west had a TCPL of Z$38 062 for the same year (Ministry of Public Service, Labour and Social Welfare, 2010). The same survey found out that in Hurungwe district 28% were very poor, 19% poor and 53% were non-poor. About 55% of the rural population in Hurungwe have been classified as income poor, with 34% being very poor. According to Clemens and Moss (2005), the purchasing power of an average Zimbabwean in 2005 had collapsed to the 1953 standard. By 2008, the country's inflation was officially estimated to be 231 million per cent (Reserve Bank of Zimbabwe, 2008). In 2008, about 80% of the population lived below the poverty datum line and the food datum line (Tarisayi, 2009). The Reserve Bank of Zimbabwe cut 16 zeroes from the currency as they attempted to reform the Zimbabwean currency between 2006 and 2008. It is proposed that by mid-2009 about 90% of the population could be classified as poor (Makochekanwa, 2009). As a result of the economic crisis, the country plunged into numerous problems such as hyper-inflation, unemployment, foreign currency shortage, brain drain, HIV and AIDS, the closure of industries, governance problems, food shortages and isolation from international monetary institutions.

Zimbabwe was transformed from being the bread basket of the region to 'begging for bread'. Zimbabwe's national maize production declined by about 74% between 1999 and 2004 (Clemens and Moss, 2005). Clemens and Moss (2005) compared the Zimbabwean maize production decline with other countries in the region that receive relatively the same rainfall pattern. They concluded that the weather pattern alone cannot explain the decline in maize yields. Maize production in Nyamakate declined from 2000 to date (Clemens and Moss, 2005). This has been caused by numerous factors such as unavailability of seed maize and

fertilisers on the market, poor market prices, erratic rains and lack of farming implements (Moyo, 2009). In 2001, maize and wheat became controlled commodities under the state and the monopoly of the grain marketing board was reinstated (Poulton, *et al.,* 2002). The government parastatal, the Grain Marketing Board (GMB) became the only entity that could buy maize and wheat and this institution controlled the prices. This made maize and wheat production an uneconomic venture especially in view of the rising costs of production and the low prices paid (Poulton, *et al.,* 2002). Makamure, *et al.,* (2001) note that between 1998 and 1999, the costs of producing a hectare of wheat increased by 68.54%, while direct costs of producing cotton increased by 120%. As a result in rural areas households engage in a diversity of economic activities in order to sustain their livelihoods (Bracking and Sachikonye, 2006). Some of the people (especially males) migrate to urban areas or foreign countries to work and earn an income, and women sell the little produce from the farms at the informal markets[21]. It is reported that some people have resorted to gold panning in Chundu communal area or along the Agway and Sanity rivers. Because of the skewedness on the formal market, informal traders prefer the informal/illegal market since it offers higher returns.

4.4 The Rural Governance Context in Zimbabwe

This section presents the governance context of the Nyamakate area within the national governance structure. Zimbabwe's political administration extends from the central government to lower arms of the state (Madhekeni and Zhou, 2012). Zimbabwe is divided into ten administrative provinces, with Harare and Bulawayo constituting the 'metropolitan' provinces (Matyszak, 2012). With the exception of Harare and Bulawayo, the other eight provinces are divided into rural and urban settlements. Except for the metropolitan provinces, each province is governed by a Provincial Council which is chaired by the Governor. The governors are appointed by the President in accordance with Section 111 of the Zimbabwean Constitution, which says, "For the better administration of Zimbabwe, an Act of Parliament may provide for the appointment by the President of governors for any area within Zimbabwe". Each province is assigned a Provincial Administrator (PA), who is a civil servant and not appointed by the president. The power relations between the governor and the

[21] See chapter 6 section 6.2

PA are not very clear, since very little is said about the role of the latter in the Constitution (Madhekeni, 2012; Matyszak, 2012). Section 33 of the Constitution stipulates the duties of a PA; "to perform such duties in relation to the Provincial Council as the Minister may from time to time direct". According to Matyszak (2012), "They [PAs] appear to be the Ministry's liaison point with the Provincial Council and Governor, and act to some extent as a quasi 'permanent secretary' to the Governor, often exercising power in areas where statute specifically assigns…". The Provincial Council presides over the district level (Figure 4.2).

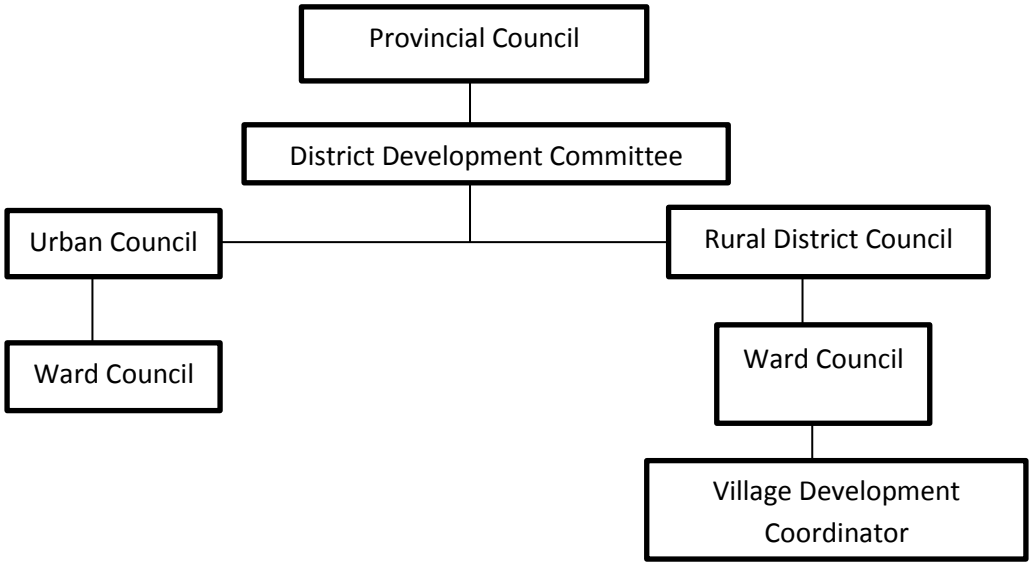


Figure 4.2 Structure of governance from the provincial to local level. *Source:* Mbereko, Alexio

Each province is divided into a number of districts whose number is determined by the population size of a province. Development issues of a district are overseen by the District Development Committee (DDC). The District Development Committee is chaired by the District Administrator (DA) and the committee is made up of all government departments, security agencies and other stakeholders representing important institutions in the district (Matyszak, 2012). The DA is a civil servant and not a political appointee. The districts are divided into Rural District Councils and Urban Councils (Figure 4.2). This study will focus on the rural structures, since Nyamakate is under the Hurungwe Rural District Council (HRDC).

The Nyamakate resettlement area is administered from Magunje where the Hurungwe Rural District Council is stationed. Hurungwe Rural District Council is one of the 58 Rural District

Councils in Zimbabwe. The Hurungwe district is administered principally under the same structure as are any other rural district councils in Zimbabwe. In the rural context, the councils and traditional leaders constitute the local government. Communal lands are governed under the Communal Lands Act [Chapter 20:04] and the Rural District Councils Act [Chapter 29:13]. The Rural District Councils Act tasks the District Councils to provide social services, water, sewage works, roads and dams (Chenje, *et al.,* 1998). The council is also responsible for drawing up the Wards' Development Plans and formulating a development plan (Matyszak, 2012). The councils have the mandate to promote development in their respective areas of jurisdiction. The Rural District Council is headed by a Chief Executive Officer, who presides over council meetings. However, the council makes decisions in close consultation with the Minister of Local Government. The Minister has the right to revoke, amend or suspend any decision that any council makes (Madhekeni and Zhou, 2012). Below the RDC there are Ward Development Committees that are at the ward level (Figure 4.2).

The Ward Development Committee (WADCO) is chaired by a Councillor who is elected by the people from the particular ward. Nyamakate resettlement area is in Ward 32. The WADCO presides over the Village Development Committees (Figure 4.2). These are the grassroots institutions of the governance and development structure. They are tasked to come up with development priorities and needs which are then forwarded to RDC for consolidation (Matyszak, 2012). However, governance and development in the rural areas of Zimbabwe is more complex than explained here for a number of reasons explained below.

The Communal Areas are characterised by overlapping structures, namely the government ministries, council structures and traditional structures. Traditional leadership exists parallel to the governance and development structure discussed above. The Traditional Leaders Act has empowered the Chiefs to carry out limited governance roles. The country has a total of 269 chieftaincies. Generally, traditional leadership structures still exist in Communal Areas of Zimbabwe but their power has been significantly reduced as compared to the pre-colonial period (Mukamuri, 2009). A number of studies show that the communal population prefers the traditional structures to be responsible for governance and natural resources management, as opposed to council or government departments (Sithole, 1999; Mukamuri and

Mavedzenge, 2000; Mbereko, *et al.,* 2007). The resettlement programme and subsequent political interests have distorted traditional leadership structures in some areas in the country by shifting traditional power structures towards becoming more like politicians (Mukamuri, 2009). Each Chief has been given a car and has a fuel allocation that is paid by the state (Makwerere and Mandonga, 2012).

After independence, the rural context of Zimbabwe has become characterised by multiple institutions existing side by side, at times with overlapping jurisdictions (Sithole, 1999). Zimbabwean communal governance is composed of three structures, namely: the state hierarchies, different government ministries operating from national to local and finally, traditional leadership (Ncube, 2011). According to Ncube (2011), these institutions are conflictual at the local level, particularly the conflict between the traditional authorities and elected council leadership. According to Makumbe (1998: 60), "the decentralisation structure (local governance) was primarily conceived for the purposes of creating the one party state". This structure served the political interests of ZANU PF as evidenced by the stripping of the traditional leaders of their power (Makumbe, 1998). He argues that the traditional leadership was being punished for working with the colonial government, hence the new government could not trust them.

Since the emergence of the Movement for Democratic Change (MDC) in 1999 as a competitive opposition party to ZANU PF, rural governance institutions have been deliberately disrupted or modified (Hammar, 2003; Makwerere and Mandoga, 2012). Since then, the local governance institutions have been subjected to violent disruptions, occupations or closure by alleged war veterans and ZANU PF youth militias (Hammar 2003). Hammar (2003) argues that in some cases senior politicians and various important arms of the State have been involved in the disruption of local governance institutions. Politicians can interfere in the effective running of the local authorities and their participation in local development because of the delegatory powers enshrined in the central state, making local authorities reliant on the central state (Chatiza, 2010; De Visser, *et al.,* 2010). This situation makes the local authorities vulnerable to central government institutions which can exploit the local structures to serve the government's interests instead of the populace (Chatiza, 2010). This

situation is exacerbated by the fact that issues at this level are politically determined. According to the Zimbabwe Institute (2005: 7),

> It is a common and accepted practice that members of a council who belong to the same political party can caucus to predetermine how to debate and vote on major issues to be discussed in councils. Sanctions are imposed on members who renege from an agreed party position.

This has been nicknamed *cheuviri* (binary) in some circles, referring to a member being ZANU PF or MDC. The binary system has sifted down to the household level. Direct aid from central and local government trickles down to the household level on political party affiliation lines, and therefore aid or projects from the government benefit people who support ZANU PF (Makwerere and Mandoga, 2012). This has been the major determinant of who benefits from government aid and projects and who does not. There is a structure for governance and development in Zimbabwe which is meant to promote development and participatory governance by communities, such as in the Nyamakate resettlement area. However, in reality, structural defects and political interference inhibit grass root communities benefitting in any meaningful way.

4.5 The health sector of the Nyamakate community

The health sector of any country is determined, amongst other things, by societal drivers such as the economy and politics (King, 2010). In this regard, the status of the health sector in Zimbabwe has been determined by the political economy of the country. From 1980 to 1990, the Zimbabwe government achieved remarkable improvements in the health sector (ZHDR, 2000). Government spending on health trebled from Z$66.4 million to Z$188.6 million between 1979 and 1989 (Nzimuramasanga and Lee, 2002 as cited by Brett, 2005). In 1988, government expenditure on health stood at 2.3% of GDP which was higher than the regional average of 0.8% of GDP (Tren and Bate, 2005).

The political will and the economic context of this period allowed for much investment in the health sector. This paid off, since most health indicators showed positive changes between 1980 and 1990. Life expectancy at birth increased from 54.9 years to 63 years between 1980

and 1988 (ZHDR, 2003), and the rates of child immunisation almost trebled. Improvements in maternal health ensured that between 1980 and 1988, infant mortality rates fell by 80% to 49 deaths per thousand births. (ZHDR, 2003). In 1991, the Zimbabwean government introduced a fund to support poor families in accessing health care and paying school fees (Mtapuri, 2008). The fund paid school and health fees to any household that was earning below Z$400 per month (Kaseke, *et al.,* 1997). During the first decade after independence, the government invested fairly extensively in social services, such as the construction of clinics, schools and road networks. A clinic and primary school were constructed in the Nyamakate communal area to benefit the community during this period.

According to the MoHCW (2010), the Zimbabwean health sector has been declining, especially during the period from 1998 to 2010, when Zimbabwean health sector lost trained personnel to the southern African region and European countries such as United Kingdom and Germany. It is estimated that more than 70% of nurses and 60% of doctors left Zimbabwe for other countries between 1999 and 2008 (Makochekanwa, 2009). All health indicators showed that the country's health sector had collapsed and consequently, the hope of achieving the Millennium Development Goals (MDGs) are doubtful today (Table 4.3). The mortality rates for children under-five years old were at 86 per 1000 live births in 2009, far higher than the MDG target of 34 per 1000 live births (Table 4.3). The attendance at birth by trained midwifery and doctors is showing signs of decreasing, which means increasingly women are delivering without a trained professional in attendance (Table 4.3). The Zimbabwean health delivery system in 2009 can be described as being 'in the intensive care unit' (MoHCW, 2010).

The slight stabilisation in the economy that followed the Government of National Unity (GNU) in 2009 has provided an opportunity to upgrade the health sector. MoHCW estimated that the country needs about US$700 million over three years or around 19US$ per capita in order to upgrade the health sector (MoHCW, 2010). The improvements in health sector funding have created an environment that has allowed the country to move from an emergency planning mode, to the pursuit of an ambitious five year National Health Strategy (2009-2013) (MoHCW, 2010).

Table 4.3 Health indicators and the MDG targets. Source: Ministry of Health and Child Welfare (2010: 4).

Indicator	*1999*	*2005*	*2009*	*MDG Target*
Infant mortality rate (per 1000 live births)	65	60	60 (MIMS)	22
Under five mortality rate (per 1000 live births)	102	82	86	34
Stunting in children under 5 (%)	27	29	35	7
Exclusive breastfeeding during the first 6 months (%)	27	22	26	70
Children 12 -23 months fully immunised (%)	67	53	49 (MIMS)	90
Maternal mortality ratio (per 100,000 population)	578	555	725	145
Skilled attendance at delivery (%)	72.5	68	60 (MIMS)	100
HIV and AIDS prevalence in adults aged 15 - 49 (%)	28	18.1	13.7	9
Adult ART coverage (%)	0	4	54	100
Paediatric ART coverage (%)	0	<1	57	100
TB Incidence (notifications per 100,000 population)	355	1047	782 in 2007	178
Malaria incidence (cases per 1000 population)	122	124	94 in 2008	62
Crude death rate (deaths per 1000 population)	17.2	-	20	-
Life expectancy at birth (years)	45	43	43	-

MIMS Multiple Indicator Monitoring Survey 2009

HIV and AIDS, malaria and diarrhoea cases have caused significant stress to the health delivery system in Zimbabwe (MoHCW, 2010). Studies show that HIV and AIDS have had two-fold impacts on the health sector, namely, eroding the workforce and increasing the burden of ill patients on a shrinking workforce (ZHDR, 2003). HIV and AIDS patients were estimated to occupy between 50 to 80% of the hospital beds, placing stress on human resources and drugs provision (ZHDR, 2003). HIV sero-prevalence reached its peak of 33.7% in 2003 before starting to decline. Anti-Retroviral Treatment (ART) roll-out has mainly remained concentrated in the urban areas (Ojikuti, *et al.,* 2008). The declining per capita expenditure on health and human resources shortage has affected the rolling out of ART to rural areas in Zimbabwe (Ojikuti, *et al.,* 2008). Anti-retroviral drugs are free in public hospitals, however, other services like laboratory tests have to be paid for. Rural households who are benefiting from ART also incur costs associated with transport, food and hospital consultation fees. The health delivery system in Zimbabwe is declining despite making remarkable improvements between 1980 and 1990 and some injection of capital by the Government of National Unit is sustaining it from total collapse. The collapse of the political

and economic institutions has also affected health delivery negatively especially in the rural areas.

4.6 Study Area

4.6.1 Introduction

This section presents the study area and places it in the national context. The data collection was conducted in 2011. The study was conducted in the Nyamakate resettlement area in the Hurungwe district (Figure 4.3). Hurungwe district is one of the six districts in the Mashonaland province in Zimbabwe (Figure 4.3). Hurungwe district is located in the northern part of Zimbabwe. The district is composed of a number of land uses namely: resettled farming, small scale communal farming, medium and large-scale commercial farming urban centres, safari and game reserves. Nyamakate is located in the northern part of Zimbabwe, sixty kilometres from Karoi. Nyamakate resettlement shares the northern boundary with Mana-pools/Marongora game reserves. The sections below will present the different social and natural environmental status of the Nyamakate area.

4.6.2 The Physical Characteristic of the Nyamakate Area

Zimbabwe is divided into five agro-ecological regions which are classified according to the amount of rainfall, temperatures and altitude (Figure 4.4). The Nyamakate communal area is in agro-region three (Figure 4.4). Annual rainfall is between 500-750mm which is characterised by mid-season dry spells. The area has high temperatures, with mean maximum and minimum temperatures ranging between 30^{o}C and 22.5^{o}C in October and July respectively (Chenje, *et al* 1998). The Nyamakate area is characterised by upland and a low land. The altitude of the Nyamakate communal area is in the range of 1160 and 988 metres above sea level. The Nyamakate communal area is mainly characterised by ferisialitic soils and pockets of lithosol soils. Ferisialitic soils are important for crop production, especially for maize and other cereals (Chenje, *et al.,* 1998).

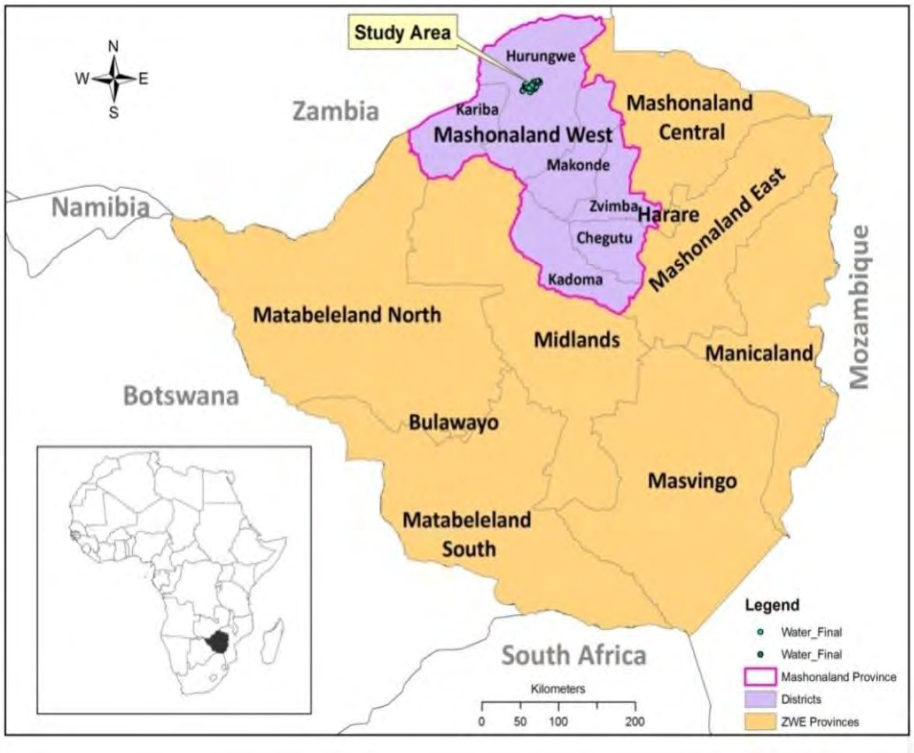


Figure 4.3 Map showing the political administrative boundaries and the study area

The Nyamakate communal area has numerous streams and water channels that run through the area. The major rivers in the area are the Rukomeshi and Nyamakate Rivers. In the past, these two used to be perennial rivers and supported large species of aquatic life like hippopotamus, fish and crocodiles, but because of siltation and low water volume they are now only flowing seasonally (Interview 52, 13/09/2011). Most of the rivers within the Nyamakate communal area drain into Rukomeshi River, which subsequently drains into the Zambezi River. Rukomeshi River flows through the Marongora Game Reserve.

The miombo woodland is the most extensive woodland type covering the Nyamakate communal area. This is largely dominated by Msasa (*Brachystegia spiciformis*) and Mfuti (*Brachystegia boehmii*) (Chenje, *et al.,* 1998). These forests are disappearing and being replaced by increasing numbers of *acacia sp.*. The acacia is of relatively lower importance to the community since they derive more benefits from the *miombo* species (Interview 1, 43/06/2012).

4.6.3 Rainfall in the Nyamakate Area

It has been warned that Southern Africa is warming much faster than other continental masses (Parry, *et al.,* 2007). In Zimbabwe, the rate of warming for the Zambezi valley has nearly doubled the IPCC projection of 0.2^0 Celsius per decade (Magadza, 2010). Data from the middle Zambezi valley region predicts warming of 5^0 Celsius per century, and a decrease in precipitation of 190mm %ury (Magadza, 2010). The Kariba weather station that provided the data is about 65km away from the Nyamakate communal area (Magadza, 2010). This data is the only data available and is used in this section as an indicator of likely rainfall pattern in the Nyamakate area. The projections of drier conditions due to climate change will significantly affect farming and access to water in the Nyamakate area. Rainfall data from Kariba for the period 1970 to 2007 suggests a decrease in rainfall especially within the past three decades (Madziwa, 2009). The rainfall data showed variations in the annual mean. The lowest records were in the 1994/5 and 2001/2 season, which recorded 70.5mm and 178mm p.a. respectively (Madziwa, 2009). The calculated mean rainfall for Kariba is 247.7 mm for the period 1970 to 2007 (Madziwa, 2009). Kariba has experienced a total of nine metrological droughts in the past three and a half decades (Magadza, 2010).

The department of Agriculture Research and Extension Services (AREX) provided rainfall readings for the Nyamakate area from 1976 to 2010, and the rainfall pattern of Nyamakate shows variations from year to year (Figure 4.5). According to Mugabe, *et al.,* (2003) erratic distribution of rainfall in Zimbabwe is typical for the natural regions three and four. The lowest rainfall seasons were recorded in the 2002/3 and 2006/7 seasons in the Nyamakate area (Figure 4.5). With the exception of the 2007/8 peak, rainfall has been decreasing since the 2002/3 season.

The Nyamakate rainfall data shows that the area experiences frequent droughts as shown by periods of very low rainfall, e.g. 400mm in 2002/3 (Figure 4.5). Disaggregated data of the Nyamakate rainfall by month demonstrates that since the 1991/2 season May to September have been very dry months with no rainfall. Rainfall is very important in the Nyamakate area

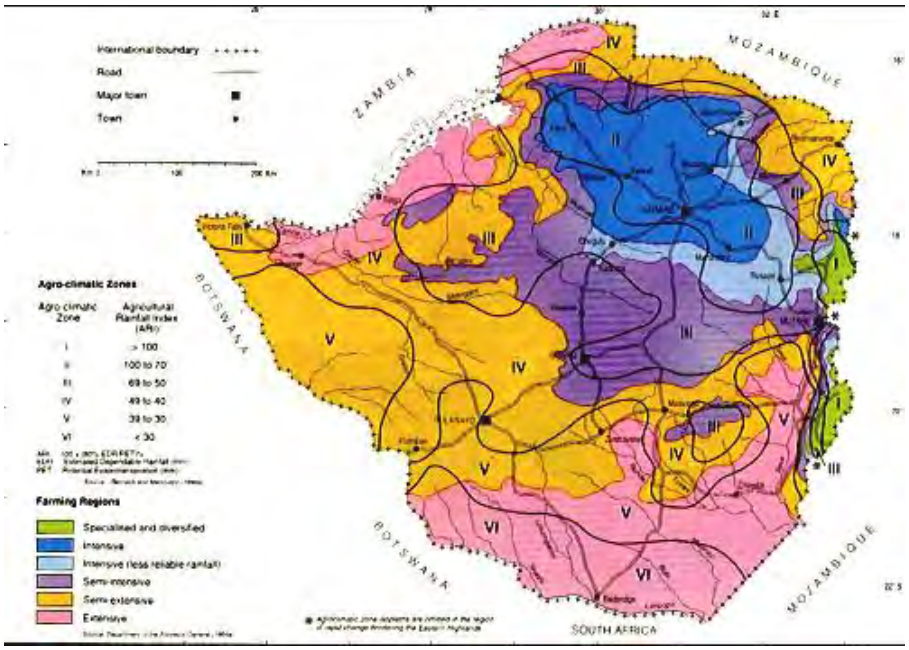


Figure 4.4 Zimbabwe map showing agro-ecological zones. *Source*: Zimbabwe Government website[22].

since the agriculture is mainly rain fed. Sufficient rainfall will also promote agriculture through generation of adequate overland flow which promotes agriculture and maintain riverine ecosystems (Mugabe, *et al/.,*2003; Chakona, *et* al., 2009).

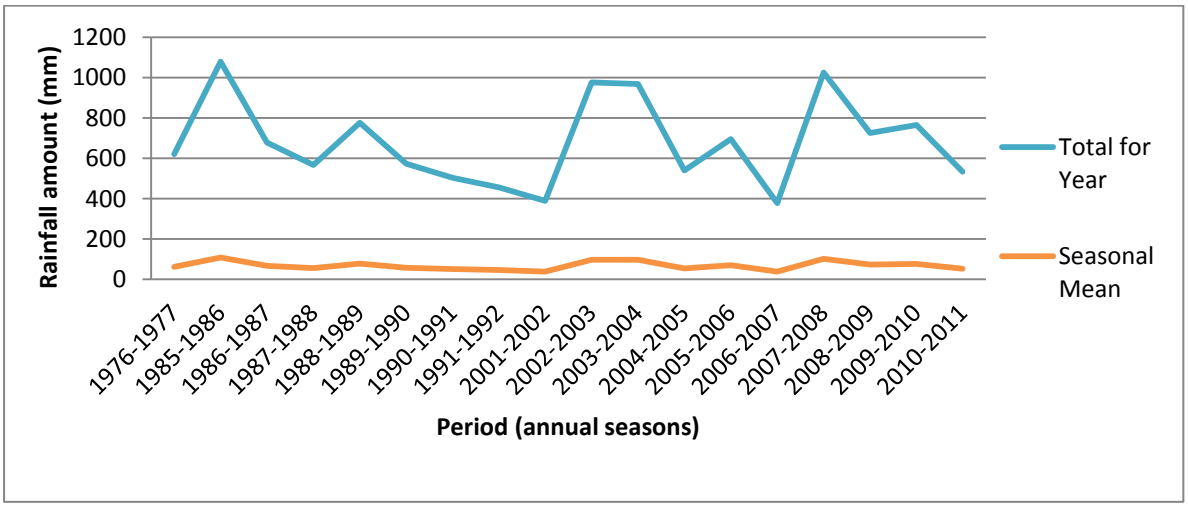


Figure 4.5 Rainfall data for the Nyamakate area. *Source:* data was provided by AREX

22 http://www.google.co.za/imgres?imgurl=http://www.fas.usda.gov/pecad2/highlights/2004/06/zimbabwe/images/zimMap2.jpg&imgrefurl=http://www.fas.usda.gov/pecad2/highlights/2004/06/zimbabwe/images/aez_zimababwe.htm&h=354&w=500&sz=157&tbnid=JAEwIBlT01zfLM:&tbnh=79&tbnw=112&zoom=1&usg=__OkiCb7Dhl6fC-370jrAWoIWKVjg=&docid=qpKpD729HcGi4M&hl=en&sa=X&ei=DZo0UeX8FefL0AXE-ICgDA&ved=0CFYQ9QEwBQ&dur=3240 [Accessed: 23/10/2012]

4.6.4 The socio-demographic context of Nyamakate

According to the last census conducted by the Government of Zimbabwe in 2002, Mashonaland West province had a total population of 1 224 670 people (CSO, 2002). About 48% of the population was male. The same census found out that about 72% of the population of Mashonaland West resided in the rural areas, while 28% resided in urban areas. The average household size was four persons (CSO, 2002).

The resettlement area of Nyamakate had a total population of 7738 people, of whom 50.39% were females during the 2002 census (CSO, 2002). In 2011, the population of the Nyamakate area was estimated to be around 7076 persons (Personal communication with councilor, 13/08/2011). The decline in population is likely to be due to people migrating out of the Nyamakate area and deaths in the area. There were 2908 households, organised into 48 villages (Personal communication with Councilor, 08/2011). The Nyamakate area is a multicultural society, in that people of numerous ethnic groups live together in the area (i.e. Shona[23], Tonga, Nyanja, Chewa, and Ndebele) (Councilor, pers. Comm., 08/2011). It is typical for resettled areas to be multicultural because of the different origins of the resettled people (Barr, 2004). The dominant language in the area is Shona. Social networks have developed over time as the people settled in the area and have developed friendships and become bounded through marriage arrangements (Barr, 2004).

The majority of Nyamakate residents rely on communal water points and firewood for fuel. In theory, according to the National Healthy Strategy for Zimbabwe 2009-2012, everyone is supposed to have access to a safe water point (MoHCW, 2009). However, in reality this is not the case due to borehole breakdowns or none having been established (Interview 41, 13/06/2011). People pursue other alternatives either as individuals or as groups or communities in order to access water, such as unprotected wells and rain water harvesting (Interview 41, 13/06/2011). The majority of the homesteads in the Nyamakate area depend on firewood for cooking, heating, building material and other uses. Hence, the woodland has become threatened by deforestation due to overexploitation.

[23] The term ‘Shona’ is a colonially inspired naming of a number of ethnic groups such as Korekore, Manyika, Zezuru etc.

The area has limited social services. The Nyamakate area has two shopping centers, comprised of grinding mills, and grocery and beer vending shops. The area does not have a bank or post office. Furthermore, the Nyamakate community is serviced by only one clinic. The clinic is manned by two trained nurses, one nurse aid and one Environmental Health Technician (EHT) (Interview 51, 05/12/2011). The patients have to pay a consultation fee and purchase medication when it is prescribed for them. With complicated medical conditions, the clinic refers patients for attention to the Karoi District Hospital which is 60 km away (see Figure 4.4 for the location of Karoi town). The Nyamakate community has a primary school and secondary school, the latter being a recent establishment (Personal communication with councilor, 08/2011). Hence, learners take advantage of the two educational facilities available to them and are schooled in the area.

4.7 Conclusion

Chapter Four contextualises the structural characteristics determining the everyday reality of the households in the Nyamakate resettlement area. The chapter sets the Nyamakate resettlement households within their historical, economic, governmental and geographical context. The Nyamakate communal area was created during the first decade of Zimbabwean independence in 1980. Although the government policy on land reform was 'willing buyer, willing seller' the Nyamakate resettlement resulted from settlers squatting on government land and later being legitimised. More details will be presented in Chapter Six on the genesis of the Nyamakate resettlement area from oral history. The weak national economic performance determines the economic status of the households. The 'time of crises' in the political economic of Zimbabwe, which prevailed in the Nyamakate area at the time of the study in 2011, has influenced the households' livelihood strategies. Over the past twelve years, the economic activities pursued became diversified to cope with the failing agricultural sector, including agriculture, vending in nearby towns, migrating to other areas for paid labour and cross border trading.

The area receives moderate rainfall that can support rain-fed agriculture. The data indicates that rain water supply to the Nyamakate area shows high rates of variability, hence

threatening livelihoods based on agriculture. The Nyamakate community is a multicultural society. Comparing the 2002 census data and the village registers suggest a decline in population by 8.5%. This decline can be attributed to mortality and migration. Due to the macro-economic situation in Zimbabwe, social facilities in the Nyamakate area are limited. The clinic and two schools are the social services currently in place. The chapter provides evidence of the structural features of Zimbabwe's political economy which is in a state of crises and has therefore impacted on the social, health, educational institutions at the local level. This coupled with water scarcity and variability creates a context in which households are increasingly under stress to maintain their livelihoods. The qualitative research methodology will be presented in the next chapter.

Chapter 5: Research Methodology

5.1 Introduction

This study adopts a qualitative methodology and so is framed within a social constructivist paradigm. Social scientists are increasingly utilising qualitative methodology that is informed by the ontology and epistemology of the social constructivist paradigm (Kitchin and Tate, 2000; Ohman, 2005). This study seeks to construct the Nyamakate community's experiences of HIV and AIDS and water scarcity and variability within the Zimbabwean political and economic systems. Due to the multi-scalar nature of post-structural political ecology theory that seeks to interrogate the social actor within the structural systems, this thesis is further framed by the critical paradigm (Kitchin and Tate, 2000).

This chapter aims to outline the methodology employed by this study which has been designed in relation to the research question and the post-structural political ecology theoretical framework adopted by the study. Thus, Section 5.2 presents the study paradigm. Section 5.3 presents the sampling techniques utilised in selection of the study participants while the research methods utilised in collecting data for this study are presented in Section 5.4. Section 5.5 presents the data interpretation process of the thematic approach from data handling to data interpretation. Furthermore, the section examines the pros and cons of the thematic approach. Section 5.6 presents the ethical considerations of the study. Section 5.7 presents the methodological issues highlighting the problems and limitations to the study. Finally, the chapter concludes with Section 5.8.

5.2 Framing Paradigms

This study is framed within the critical and the constructivist paradigms. A paradigm is described as a net that contains the ethics (axiology), epistemology, ontology and methodology, and acts as a set of beliefs that guide action of a research project (Guba and Lincoln, 2005; Hennink, *et al*., 2011). The ontology, questions about the nature of reality and

the nature of human beings in the world (Guba and Lincoln, 2005). The epistemology of a paradigm will dictate the way in which such a reality can be known, while the methodology concerns the best means for gaining knowledge about the world (Guba and Lincoln, 2005; Hennink, *et al.,* 2011). The critical paradigm assumes that reality is determined by social structures, and hence and power and control determine freedom and oppression. Thus the knowledge generated from the research can contribute to changing existing oppressive structures through empowering the oppressed and powerless (Lincoln, *et al.,* 2011). On the other hand, the constructive paradigm argues that reality is constructed by the actor and researcher and that it is based on their world view point created from their interaction with their surroundings (Lincoln, *et al.,* 2011). Finally, ethics focus on being, as a researcher, a moral person with respect for respondents' dignity and rights (Guba and Lincoln, 2005).

Unlike other theories that resonate within one paradigm, post-structural political ecology is framed by both critical and constructivism. The weight allocated to either of these two depends on the author's orientation. As demonstrated in Chapter Three, political ecology is not a coherent 'grand' theory, and it uses a multi-scalar analysis of the relationship between natural resources, people and the political economy, and therefore researchers use different paradigms in their studies (Schubet, 2005; Biersack, 2006). Post-political ecology critically interrogates the dialectical interactions of natural environment and the social actor within the context of structural influences and therefore can be said to fall under the critical paradigm (Escobar, 1996). This study, furthermore, focuses on social actor (agency) in relationship to the macro social systems (structure) and how this shapes their experiences of water resources and HIV and AIDS. It assumes that the realities and experiences of the actors are socially constructed, this falling also within the constructivist paradigm.

Objective four and five of this study seek to understand structural issues that inform and shape the reality of the social actors in the Nyamakate area. Hence, in order to critically interpret the influence of the structural systems on the people at the grass roots critically, the research is framed in the critical paradigm. Some political ecology studies have been criticised for under playing the 'political' aspects in the interactions between social actors and the natural environment (Walker, 2005). The critical paradigm aims to study the political structures in an attempt to reveal the operation of power as it relates to social and

environmental struggles (Denzin and Lincoln, 2011). Furthermore, embedded in the critical paradigm is the view that knowledge is sought in order to trigger transformation of social policy and practice, a goal also of political ecology (Kitchin and Tate, 2000; Denzin and Lincoln, 2011). The ontology of critical paradigm is that human nature exists in a world that is based on the struggle for power, and this leads to social inequalities, which promote the privileging of certain social actors while other remain oppressed (Denzin and Lincoln, 2011). It is assumed that in order to change the existing social order, research should focus on social structures, oppression, power, control, freedom and oppression (Denzin and Lincoln, 2011). The analysis of the post-structural political ecologists' focuses on the agency of a social actor[24] in relation to the societal structures.

Constructivist studies aim to understand and interpret meaning attached to a phenomenon under study by interpreting the social actor's meaning of their lived experiences (Ohman, 2005; Denzin and Lincoln, 2011). Furthermore, this approach interprets the actors' lived experiences to understand how meaning is created through embodied perceptions (Starks and Trinidad, 2007). Constructivism makes a number of assumptions which are mainly ontological and epistemological. The ontology of constructivism is that there are many realities in the form of mental constructions by individuals and these are bound by time, context and the individual's judgement of their experiences (Ohman, 2005; Denzin and Lincoln, 2011). The researcher and the social actor co-construct knowledge out of their subjective engagement in the latter's natural setting and they influence each other (Ohman, 2005; Caelli, *et al.,* 2008). Thus, within the constructivist paradigm, knowledge is created in a transactional relationship between the researcher and the study participants (Denzin and Lincoln, 2011). These assumptions guided the production and interpretation of the knowledge collected with the social actors in the Nyamakate area. As mentioned in Chapter One, the study seeks to understand the experiences and responses of households to the realities of HIV and AIDS and water resources scarcity. Through the use of data collecting tools discussed in Section 5.4, the researcher co-constructed knowledge with the social actors, through the interactions between them.

[24] Chapter Three has detailed the assumptions and arguments of both structural and post-structural political ecologists.

This study utilises a qualitative research methodology as the means to answer the research questions. Research methodologies are informed by the ontology and epistemology of the paradigm adopted by the research (Kitchen and Tate, 2000; Gelo *et al.,* 2008). Therefore, the critical and constructivist paradigms informed the qualitative approach and the data interpretation undertaken in this study. Numerous reasons are advanced for the choice of qualitative methodologies.

The first reason for choosing a qualitative methodology is its ability to interpret social experiences and individual constructs. Richer knowledge about society is obtained by looking at the subjective multiple perspectives on reality, as opposed to attempting to construct one truth. People's realities are subjective; according to Hennink, *et al.,* (2011: 9),

> One of the most distinctive features of qualitative research is that the approach allows you to identify issues from the perspective of your study participants and understand the meanings and interpretations that they give to behaviour, events and or objects.

The subjective approach of qualitative researchers allows for the studying of day to day issues beyond the preconceived selected variables and counts of observed phenomenon, by studying multiple social realities. Qualitative research views the world as a subjectively lived reality, hence reality is not considered an exterior object (Mottier, 2005).

Secondly, constructivism accounts for the contextual influences on people's understanding of their reality (Tetnowski and Damico, 2001; Hennink, *et al.,* 2011). The qualitative approach assumes that, as reality is socially constructed, external factors influence the worldview and reality that is constructed and lived by the actor. Interpretive research allows for an understanding of a phenomenon in its 'authentic context,' recognising the effects of issues like political, economic, culture, gender, race, class and space (McEwan, *et al.,* 2004, Mottier, 2005) and is thus a synthetic approach. According to Gelo (2008: 272),

> One fundamental assumption … is that behaviour is best understood as it occurs in its natural context, without external constraints or control [from the researcher]. The natural context of observation, instead of being regarded as a source of validity to be

controlled, is considered essential for a deeper understanding of the phenomena under investigation.

Thus, qualitative research is able to understand complex social phenomenon and the context which will inform the actor's behaviour and experiences.

Thirdly, qualitative methods are well suited for this study since an in-depth understanding of the relationship between HIV and AIDS and water scarcity is required. Qualitative methods are deemed the best route in providing this data because they probe more deeply the 'why' and 'how' of an issue, enabling the understanding of an individual's life experiences, beliefs and attitudes (Marshal, 1995; Ulin, *et al.,* 2002; Hennink, *et al.,* 2011). These questions search for meaning within the social context of events and activities. Using these questions, qualitative research opens up the 'black box' of complex social phenomenon. Thus, qualitative research asks questions that are aimed at processing a theory rather than to validate a theory (Maxwell, 1998).

Finally, this thesis values the narratives of the people and the diversity of their narratives. According to Ezzy (2002: 45) qualitative methods explicitly identify a person's understanding of the situation as something to be discovered rather than assumed. The methods selected and applied in this research are framed within the critical and constructivist paradigms as well and have been selected on the basis of the four strengths discussed above.

5.3 Sampling of Study Participants[25]

The target population of this study were the people who reside in the Nyamakate resettlement area. This thesis purposively recruited 53 participants (see Appendix 1) and 115 focus group interview participants in eight groups[26]. In purposive sampling the researcher uses prior

[25] For the sake of brevity 'Study participant/s' will be referred to as 'participant/s' throughout the rest of the thesis.

[26] For the sake of brevity the interviews have been labeled as follows: FGI 1-8 refers to the specific Focus Group Interview; Interview 1-40 refers to the specific household interview; interview 41-50 refers to the specific key community informant interviews; and interviews 51-53 refers to the specific key stakeholder interviews.

knowledge and experiences of the population to suggest those participants who would be most suitable for the purpose of the study (Kitchen and Tate, 2000). Qualitative research utilises very small sample sizes which allows for in-depth analysis by engaging with each participant to understand their experiences in relation to the research question (Hennink, *et al.,* 2011: 17). An appropriate sample size for qualitative research is one that answers the research question until the level of saturation (Marshal, 1995, Hennink, *et al.,* 2011). This assumes that participants will be recruited until no more new themes emerge from the data.

5.3.1 Sampling of Villages

The first sampling exercise involved the selection of the villages from which participants for the study were to be drawn. Nine out of 40 villages in Nyamakate area were selected to participate in the household and focus group interviews. A village that participated in the household interview survey was not in turn considered in the selection of participants for the focus group interviews. Purposive sampling was used to select the villages from which the study participants were drawn. Four villages were selected for the household interviews. These villages are Village 25, Village 27a, Hotel and Juliet (Figure 5.1). The eight focus group interviews (FGI) were done in five villages, namely India, Sierra, Charlie, Echo and Golf. Two FGIs per village were undertaken in Golf, Echo and Charlie because women and men had different sessions. In India and Sierra villages two FGI were done with men and women together (see Section 5.6).

A topographical map (scale 1:50 000) was obtained from the Surveyor General's office in Harare as a basis for the selection of villages, but it was outdated[27]. The topographical map was then updated by inserting the villages using a hand drawn map drawn by health workers and the councillor. The upgraded hybrid map (not to scale) was used to locate the villages in the Nyamakate area. From this map it was evident that the Nyamakate resettlement area could be divided into two areas, namely the highland and the lowland. Villages 25 and 27 are on the highland while villages Hotel and Juliet are in the lowland (Figure 5.1).

[27] The tographical map was developed in 1978 and did not indicate any of the human settlements because there were none at the time. However, it was useful since it showed the rivers and the relief of the area and these were used as base for relative positioning features.

A number of factors were considered in the actual selection of villages that participated in the study such as accessibility, presence of a health worker, water availability and pre-information on the presence of HIV and AIDS affected households. The information provided by the health workers and the Councillor in the mapping exercise influenced the sampling. Villages with different levels of water availability were sampled. In the highland area, Village 25 and 27a were selected to participate in the study because the scarcity of water in this area; it is one of the driest in the Nyamakate area and the borehole is non-functional (see Figure 5.1 for their locations). Villages Hotel and Juliet were selected to participate in the study because high ground water resource and the presents of households affected by HIV and AIDS (see Figure 5.1 for their location). Proximity to the game park boundary was also a determining factor in the selection of Hotel village to participate in the household interviews (Figure 5.1). The reason for this is that there are three villages that are close to the game fence, namely Hotel, Quebec and Romeo, and since the Hotel village was closer to the main road for access, it was selected.

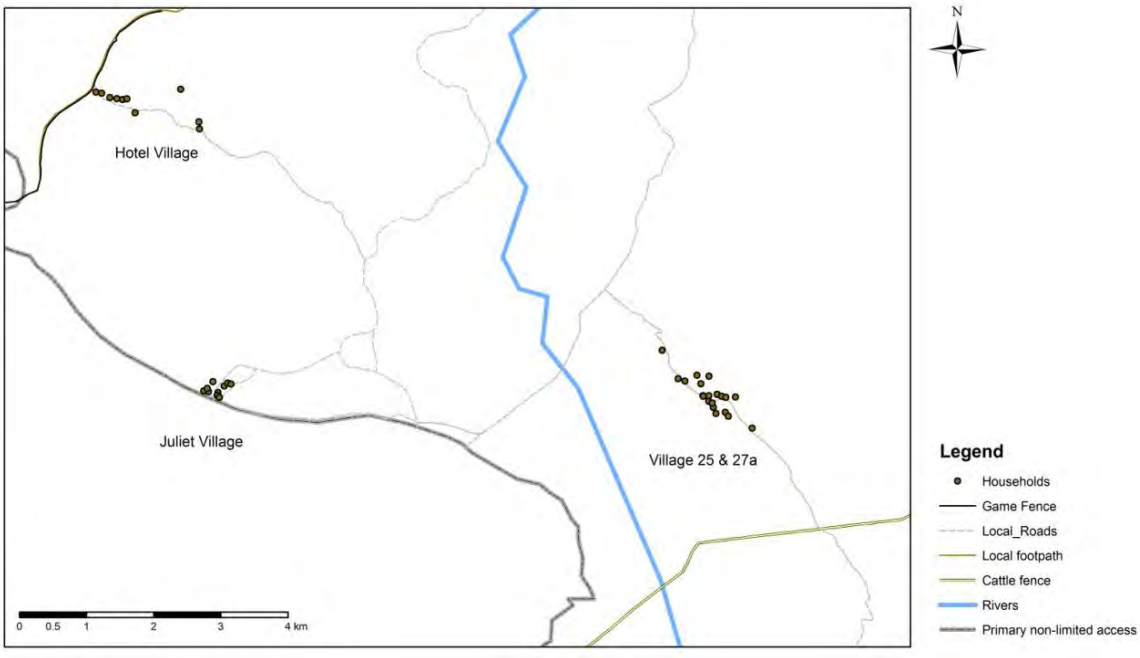


Figure 5.1 Sampled households that participated in the study. *Source:* Mbereko Alexio

Furthermore, the observations made during the water points mapping exercise[28] were used in the selection of villages to participate in the study. Villages on the highland (east of the Rukomeshi river in the area) were relatively more water scarce than those on the lowland (west of the major river, see Figure 5.1). The rationale for the selection of the villages was therefore based on both a diversity in water resources and HIV and AIDS levels of the selected villages, and was conceived as yielding multiple realities of the people, since social actors construct different meanings depending on their context (Mottier, 2005).

5.3.2 Sampling of key community Interview Participants

Sub-question five of the thesis requires an understanding of the Nyamakate's history in order to contextualise the current social constructions of the people's experiences and reactions to water scarcity and HIV and AIDS. Ten community participants were recruited to be interviewed about the history of the Nyamakate area (Table 5.1). Participants to this interview were purposefully sampled according to the following criteria: their duration of stay in Nyamakate, their family lineage in Nyamakate, and the local respect for their knowledge and role in traditional functions.

Table 5.1 List of key community participants

Interview Number	*Gender*	*Approximate age*	*Village*
41	Male	64	Village 24
42	Male	54	November
43	Male	79	Village 24a
44	Male	59	Mike
45	Male	60	Alpha
46	Male	53	Juliet
47	Male	71	Kilo
48	Male	59	Tango
49	Female	53	Bravo
50	Male	89	Charlie

[28] A mapping exercise was undertaken using a geographical positioning system (GPS) to create a map of the water points used by the Villages and their status (See Chapter 7).

Snow balling and purposive sampling were used at different times in order to recruit key community interview participants. Firstly, snow balling was used to recruit the first four participants (Interviews 41-44) (Table 5.1). My grandmother recommended one person to me, who was the first participant to be interviewed. After the interview he referred me another person whom he felt was more knowledgeable than him. This chain of referencing continued. As word spread around that people with historical knowledge were sought, there was a large pool of people who were recommended and four were selected in this manner.

Purposive sampling was used to recruit the remaining six key community interview participants (Interviews 45-50) (Table 5.1). Purposive sampling allowed the researcher to select most productive participants based on their potential contribution to the research (Marshall, 1996). Purposive sampling is therefore a technique for sampling participants who suit the purpose of the research question, in this case people who were knowledgeable on the history and political economy of the Nyamakate resettlement area. The sampling method was deemed as convenient in recruiting the most knowledgeable participants, and is a strategy that is widely accepted in the literature for doing so (Marshal, 1995; Ezzy, 2002).

5.3.3 Sampling of Household Interview Participants

In order to answer the research question the researcher purposively sampled 40 households to participate in the study (See Appendix 1 with list of respondents 1-40). The households were sampled from four villages as shown in Figure 5.1. Twenty households were from the highland area and the other 20 were from the low land area (Figure 5.1). For logistical reasons neighbouring villages were recruited into the study in these areas.

The 40 households were categorised based on their HIV and AIDS status into affected, indirectly affected and unaffected households. The operational definition and practical identification of an HIV and AIDS affected household has been problematic in social science HIV and AIDS research (Barnett and Blaikie, 1992, Oni, *et al.,* 2002). This study supports Oni, *et al.*'s (2002) explanation of an affected household:

> An HIV and AIDS affected household is a household that have suffered premature adult death and/or chronic illness associated with AIDS related conditions. A premature adult death was defined as death amongst household members under the age of 70 that could be linked to obvious HIV and AIDS-related symptoms. Chronic illness defined in terms of a person being chronically ill for at least the past 30 days prior to the survey, and an adult was defined as an individual aged 18 years or above (Oni, *et al.,* 2002; 175).

Thus an HIV and AIDS affected household is defined as a household with an HIV and AIDS patient or which has recently experienced an HIV and AIDS related death. The indirectly affected household would be any household with one of their members that is involved in assisting an HIV and AIDS affected household. The unaffected household has neither of the conditions of the above two households. Central to qualitative research and this thesis is the desire to understand and uncover the multiple realities of the participants rather than generalising across the population (Kuzel, 1992). Interviewing forty households is considered to be adequate for this task.

Local leaders and health workers were asked to provide basic information about the households and community. They provided information on: illnesses in the area; the nature of illness; the frequency of deaths, which were female-headed households and the household locations. Attention was also paid to use of slang words used by the informants in the description of the nature of illness words for example ‘boarding a one way bus’ would point to suspected HIV and AIDS related illness in a household. This information supplied by local leaders and health workers was used to categorise households in terms of how they were affected by HIV and AIDS and this allowed for the households that would participant in the study to be sampled. A list of HIV and AIDS affected and unaffected households were drawn from the information supplied by the community workers. Study participants were then sampled purposively from each list. A third group of indirectly affected households was not envisioned at this time of the study, and only emerged as an important category of households at the data interpretation stage of the research.

Hennink, *et al.,* (2011) identify two advantages of asking local stakeholders for information about the community. Firstly, community workers (who cannot be identified for ethical reasons) can provide valuable information about the local community and identify potential households who could participate in the research. Secondly, community workers can effectively introduce the study to the community. This was the main reason for the community's effective participation in this case in the Nyamakate research (this point will further be discussed in Section 5.6).

5.3.4 Institutional Stakeholder Interviews

Representatives from institutions in the Nyamakate area were also targeted as participants for the study. As alluded to in Chapter Four, there are very few 'visible' institutions operating in the Nyamakate area. Key stakeholder participants are individuals who hold key positions in these institutions which operate within the Nyamakate area. Out of a possible five institutions only three participated in the study. Representatives from these institution[29] were successfully recruited into the study and they were from the local authority (one participant) and Ministry of Health and Child Welfare (two participants) (Table 5.2). Participation by GOAL[30] was not possible as the head refused to participate in the study. Hence data accessed on GOAL and its role in the Nyamakate area is derived from other participants (Table 5.2).

Table 5.2 List key stakeholder participants for the study

Institutions	*Interview number*	*Position of representative*	*Gender*
MoHCW	51	Nurse	Female
MoHCW	52	Nurse	Female
Local Government	53	Councillor	Male

[29] The names or their positions have been withheld for ethical reasons. The participants did not consent to their identities being revealed.
[30] The non-governmental organisation is called GOAL and the organisation's website http://www.goal.ie/ does not specify whether this is an acronym for anything.

5.3.5 Sampling of Focus Group Interview (FGI) Participants

The reason for choosing to conduct FGIs is that participants respond and build on the views expressed by their colleagues. They interact with each other and hence the resulting understanding of social reality is influenced by others in an iterative process (Litosseliti, 2003). Participants in the Focus Group Interviews (FGIs) were purposively sampled relying mainly on the information from the village health workers as had been the case with the semi-structured interviews. Three out of the five villages that participated in FGIs sessions were held with women and men separately (Table 5.3). In the other two villages, male and female participants were included in the same FGIs (Table 5.3).

Table 5.3 Focus Group Interview participants

FGI	*Village*	*Male/Female/Combined*	*Number of participants*
1	India	Combined	15
2	Sierra	Combined	12
3	Charlie	Female	12
4	Charlie	Male	10
5	Echo	Female	14
6	Echo	Male	13
7	Golf	Female	15
8	Golf	Male	14

The selection of the participants was undertaken with the assistance of village health workers. In the selection of FGI participation, care was taken to include varied age groups and people of different marital status. Care was taken not to recruit too many participants for the FGI, so the number of participants per FGI was restricted to between 10 and 15 (Table 5.3). The study conducted eight Focus Group Interviews. Care was taken to recruit people of similar social attributes like gender and socio-economic status in the same session per session. For example, having separate sessions for women and men. Furthermore, I made sure that the local leaders were excluded from the FGIs for community members. People from villages where household semi-structured interviews had been conducted were also excluded from participating in FGIs. This was done in order to expand the number of participants in order to potentially derive additional themes.

5.4 Data Gathering Methods

The study adopted qualitative methods of data collection which is part of the interpretative constructivist paradigm adopted by this thesis. The thesis used three data gathering techniques, namely observations, semi-structured interviews and focus group interviews (FGI). Rapport was created with the study participants through numerous ways depending on the context. For example on a hot day in summer it was strategic to talk about the weather or in some cases discuss about sport with middle aged people; at times older people spoke of generational gap and how the current generation has gone astray. All this 'small talk' acted as ice-breakers in order to develop rapport. It was also important to pick a good spot to sit so that the Dictaphone used to record the interviews could record the voices clearly. All qualitative data from the interviews was tape recorded using a voice recorder and then transcribed. The researcher administered all the interviews and FGI. This was done to ensure consistency in the data and allows for the researcher to appreciate the contexts and expressions acted out by participants.

5.4.1 Key Community Informants Interviews

An interview schedule with semi-structured, open ended questions was administered to the key community informants, namely elderly people who have stayed in Nyamakate since the beginning of the resettlement (see Appendix 2). They were purposively selected as they hold a historical knowledge of the resettlement of the Nyamakate area. The data collected addressed objective five of the study (Appendix 2), and therefore the interviews gathered data on: the socio-cultural and historical background of the area, history of the resettlement exercise, historical data on water resources, dynamics of access to water resources, HIV and AIDS and water resources utilization, institutional dynamics and changes in the political economy context that have affected the Nyamakate community. The data accessed is important in order to place qualitative data collected in the study in a position to be contextualised within a historical and structural context, since very little has been published on the history of the Nyamakate area.

5.4.2 Household Interviews

An interview schedule with semi-structured, open ended questions was used to collect information from the household. The data was collected to address objectives one, four and six of this study (Appendix 3). The interviews gathered data on: household structure, household livelihoods, the household's experiences of the impacts of HIV and AIDS, the impacts of changes and scarcity of water resources on livelihoods, power relations within the community and patterns of access and usufruct rights to water resources, the relationship between HIV and AIDS and water scarcity as experienced by household members and the change and support rendered to the community by local and national civil and public institutions (Appendix 3). The household head was the targeted respondent. The interviews were conducted at the participant's homestead. At the end of every interview the homestead's geographical position was recorded by means of a GPS. This method of interviewing household heads through a relatively open interview process allowed the researcher freedom to explore and probe on issues of interest that came up, hence covering any gaps in data (Kitchin, *et al.*, 2000). Interviews give the researcher an understanding of the social actors' own understanding, experiences and interpretations of social environmental issues (Lindolf, 1995). This was possible as the researcher engaged into a dialogue with the study participant and probed beyond the given answers, seeking clarification and elaboration where necessary (May, 2001).

5.4.3 Institutional Stakeholder Interviews

An interview schedule was used to collect data to address objectives four and six (See Appendix 4). The interview schedule gathered data on the HIV and AIDS scenario in Nyamakate, water scarcity, changing water resources in Nyamakate, the association of HIV and AIDS and water resources scarcity and change and support rendered to the Nyamakate community by civil and public institutions.

5.4.4 Focus Group Interviews (FGI)

Focus group interviews were used to gather community views on issues covered from objective one to six (Appendix 5). The focus group interviews collected data on, households experiences and responses to HIV and AIDS and water change and scarcity, power dynamics that influence access to water, institutional support and relationship of the Nyamakate community to the Marongora game park. The data gathered from the focus group interviews (FGIs) was used to triangulate data gathered from household and stakeholder interviews. Ulin, *et al.,* (2002) support the use of FGIs as a tool to triangulate data collected via other data collection tools. The participants of the focus group interviews were stimulated by the experiences of others and were keen to articulate their own experiences and perspectives. Hence, the FGI yielded rich data as a result of the debates and contestations amongst the social actors. Every village has a space where they conduct their village meetings, and these were used for four of the eight FGIs. The FGIs at the Golf and Echo villages were conducted at the clinic. These four FGIs were conducted at the clinic because of a communication breakdown between the researcher and the village health worker (See Section 5.6). Refreshments were provided for the participants for these four FGIs. The FGIs were tape recorded using a Dictaphone and a research assistant took notes.

5.4.5 Observation

Non-participatory observation was used as a method of gathering data and field notes were recorded of these observations. I visited the water points at the time when people were fetching water and observed the following: who came to fetch water, how much water was abstracted, how long does it take for the borehole to start producing water; when is water finished; and what is the general level of hygiene at the borehole area? The people were aware that I was a researcher and did not object to my presence.

I also participated in one meeting for the village health workers at the clinic in September 2011. This data was also recorded in the notes. Observation as a method of data collection has the advantage of going on as activities happen. Meanwhile, the researcher is watching

and does not have to rely on someone else narrating the events to them (Kitchin and Tate, 2000).

5.4.6 Mapping

The study made use of Geographical Information Systems (GIS) maps. GIS is a tool that seeks to understand the world by describing and explaining data referenced by spatial or geographic coordinates (Clarke, 1997; Robinson, 1998). GIS involves computing cartographic information and linking it to remote sensing and/or data from field surveys (Robinson, 1998). This study adopted GIS as one of the data collection and presentation methods because it serves as a data management tool-both a database for storing data and a system capable of analysing spatial data via the running for storing data queries about the data (Clarke, 1997).

Although GIS can be used for exploratory data analysis, in this study GIS was used for descriptive purposes. Due to the fact that the topographical map (Scale 1:50 000) obtained from the Zimbabwean Surveyor General's office was out of date, a digitised Google map was used instead. In the field, a Garmin (Etrex model) hand held Geographic Positioning System (GPS) was used to collect the spatial reference points on the ground. The points that were geo-referenced included the location of interviewed households, water sources of these households, clinics and shopping centres in the study area.

An attribute table was created whereby socio-economic information and demographic data related to the households was recorded enabling maps to be created through the layering of the attribute data. For example, the data is transferred to the GIS data base and an electronic map of the study area created. Data then can be attributed to the points, lines and polygons on the map, e.g. interviewed households and villages can be labelled.

5.5 Data Interpretation

The qualitative data gathered by the methods employed by this research has been interpreted using the thematic approach. All 53 interviews were transcribed verbatim from Shona into English by the researcher. Hence, the transcribed text from the interviews forms the input to the thematic analysis used by this study to interpret data.

This thesis adopted Dey's (1993) approach in order to interpret the data generated from the interviews and focus group interview. As recommended by Dey (1993) data interpretation involved two activities, namely, fragmenting and connecting. The study followed the five stages prescribed by Dey (1993) namely: description, contexts, intentions, classification and making connections. These processes will be briefly described and are shown diagrammatically in Figure 5.2. Qualitative interpretation involves the thick description of data which necessitates an understanding of the context of action, the intentions of the actor and the process in which action is embedded (Dey, 1993; Kitchin and Tate, 2000). All the interview and observation accounts were written out carefully paying attention to the intentions of participants and the context in which participant's realities are constructed. Body gestures such as looking in the distance or up, pausing, laughing and others, were recorded and noted in the data interpretation.

Secondly, Dey (1993) emphasises the importance of the participant's context. The importance of context in understanding the participants' construction of reality and response to HIV and AIDS and changes in water resource has already been dealt with in Chapter Three and Four. I visited the homesteads and villages and made notes of my observations which provided a contextual basis for the interpretation. The context is discussed as it affects and is affected by the description of data. Situational context, according to Dey (1993: 33), to refers to,

> … detailed descriptions of the social setting within which action occurs; the relevant social contexts may be a group, organisation, institution, culture or society; the time frame within which action takes place; the spatial context; the network of social relationships, and so on.

The interpretation of the findings considered information on the societal structures operating at the national and local level to contextualise the Nyamakate households' experiences with HIV and AIDS and water scarcity.

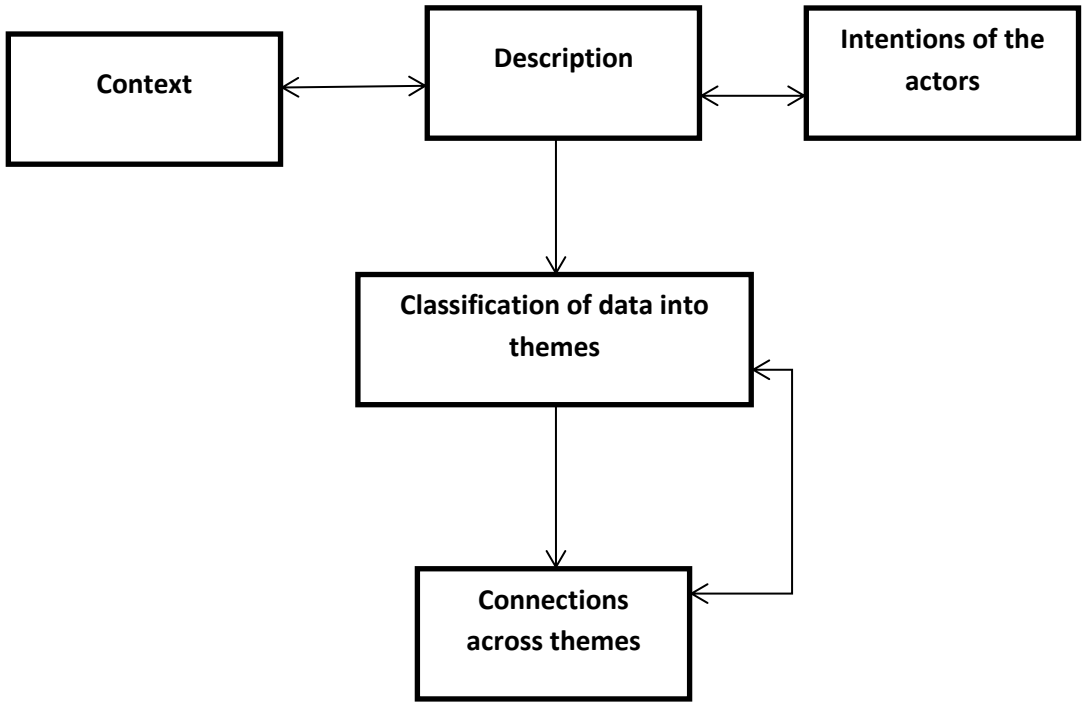


Figure 5.2 Conceptual diagram of the data interpretation process. *Source*: Dey (1993: 48).

Thirdly, Dey's (1993) framework of interpreting qualitative data values the description of data. The assumption is that study participants define their situations based on personal intentions and motivations (Dey, 1993). According to Dey (1993: 37), "Neither motivations nor contexts are self-evident ... we have to allow for the usual mix of ignorance and self-deception, delusions and lies". The researcher went through each interview in order to understand the participants' intentions and expectations. These motives and intentions were considered in the drawing up of themes. For example, some of the women who participated in focus group interview held at Charlie Village deliberately refused to acknowledge that there was HIV and AIDS in the Nyamakate area during the early stages of the session. However, later on in the focus group session they acknowledged that HIV and AIDS were there, but claimed it did not affect people from their church. Such contradictions within the data being interpreted were noted at this stage of the data interpretation. The intentions of the research subjects have to be understood and their interpretation of the researcher. Study

participants have interests and needs that they need to advocate for whenever they think they have an opportunity.

Fourthly, the described data was classified according to the emerging themes. The classification of the data into themes was guided by the objectives and theoretical framework of the study. Since the study adopted a deductive approach, the objectives presented the obvious themes, while the sub-themes largely emerged from the data. The semi-structured interviews had questions which were informed by the objectives and these were used as the major themes. Firstly, the data was organised into themes for each interview. The second stage goes beyond the individual interview by classifying all the interviews under similar themes. At this stage the interviews were loaded in NVivo version nine. The themes were also further classified into sub-themes which were also entered into NVivo version nine. These sub-themes emerged from the data and presented an opportunity for interpreting data at a more detailed scale than the themes. In the process, similarities and differences in the data emerged. The aim of classifying data is to make it understandable to others and reveal the pattern in the data (Dey, 1993; Kitchin and Tate, 2000). Kitchin and Tate (2000) argue that the classes or themes do not only have to come from the actors or their actions but the researcher can also impose these from the observations. Putting data into themes can be envisioned as funnelling data in order to allow more useful analysis (Dey, 1993).

Finally, the themes were analysed for relationships or connections to one another. This was a back and forth process with creating the themes presented above. Dey (1993: 48) argues that "Classification lays the foundation for identifying substantive connections. But now we are no longer concerned about similarities and differences between the blocks [themes]". The differences and similarities from the themes were analysed, with particular focus on interpreting how they came about. The relationships between the themes and sub-themes were also interrogated. Political ecology theory is used as the framework for this study and is used to determine linkages between the emerging themes.

The data interpretation described above was facilitated through the use of the Nvivo version nine qualitative analysis software to store the data and create themes. The computer

programme has limitations, so in such cases the data was analysed manually. Nvivo was useful in running 'word frequencies', 'quick reference to created themes' and for analysing the responses of one participant or themes.

5.6 Ethical Considerations

A research proposal was submitted for ethical clearance to the University of KwaZulu-Natal Ethics Committee and the proposal was approved (Appendix 7). All ethical codes of research required by the University of KwaZulu-Natal were upheld by the researcher and the supervisor. The gatekeepers are important when doing research, especially in the Zimbabwean political context[31]. Permission to conduct the research was sought from the Hurungwe Rural District Council (HRDC) and it was granted (Appendix 6). The permission letter was useful in accessing the study area as the local leadership demanded to see it upfront. At the Nyamakate community level, permission to access the study area was sought from the councillor.

Before every interview consent was sought from the potential participant. Only two potential participants declined to participate in the study. The participants' confidentiality was strictly upheld from data collection to the thesis writing stage. This involved not attaching anything that could link the data to the study participant, as well as the appropriate storage of data. The study did not recruit respondents below 18 years of age.

5.7 The researcher's positionality and limitations to the study

The people in the study population are referred to as 'participants' as they are seen as participating in the research and discussing and telling their stories through an interview or focus group discussion (Hennink, *et al.,* 2011: 17). This research adopted a qualitative approach, thus it does not make any claim to be objective. The research is anchored in the assumption that knowledge was co-constructed by the researcher and the research participant. Thus, reality is conceptualised as a multiple, socially constructed phenomenon, where the

[31] Refer to Chapter 4 for the political context in rural Zimbabwe.

knower and the known are inextricably connected to each other (Gelo, *et al.,* 2008). This challenges the traditional thinking that the physical and social worlds are independently existing universes that hold knowledge which can be analysed objectively (Steier, 1991). Thus, the research depended on the subjectivity of the researcher whose involvement with participants resulted in the co-construction of knowledge. This section will discuss the researcher's reflexivity in the process of the research and write up. It is important for me to discuss my positionality in this research process since it discloses what previous knowledge I brought to the knowledge co-construction process. The co-construction of knowledge is dependent on the position of the subjects creating that knowledge (Breuer and Wolff-Michael, 2003).

I am an insider of the study area, the Nyamakate area. My mother's family is one of the original traditional inhabitants of the Nyamakate area. My maternal grandfather's father was a member of the Matawu royal family of the Matemai totem[32]. The community's knowledge of my family enhanced my acceptability at the household level. According to Abu-Lughod (1988), though limitations of access and acceptance of the outsider are known in research, those of being an insider are poorly understood. An understanding of the local Shona culture and its practice is highly valued by the elders and someone with this knowledge will therefore be granted their trust. The elders therefore felt that they could speak to me about other people within the area. The study was also greatly enhanced by the interviews on the history and background. To the older people, they were pleased that I, as a local person, was trying to understand their history, especially since it is not common for a person of my age and education to be interested in Shona traditions and history.

As a result of being an insider there were attempts to 'buy' into disputing family factions. Associating with one side of disputing family faction would lead to distrust by people from other factions. Associating with anyone despite their faction in the family was taken with

[32] More information see chapter 8. My grandfather's father was Jenami. Jenami had many wives and he came from a minor family in the royal family. After the white government moved them from the area he took his family to the Mujinga communal area, while those loyal to Matawu went into the Nyamhunga area. At this stage the surname Matawu was dropped by the Mujinga strand of the family and Chosa became the new surname. Chosa was a nickname given to my grandfather's mother who used to drop her babies from her back when drunk and not even notice it until she reached home! My late grandfather moved back into the Nyamakate area in 1988 under the second phase of resettlement. The family's surname is Chosa until today.

mixed reactions. Some would be happy because they were under the impression that I was non-discriminatory regarding family alliances, while for others it was unacceptable for me to work among many families. Those who did not accept it was for one or both of the following two reasons. Firstly, the 'enemies'[33] of the researcher's family/lineage would think that the researcher is a carrier of *muti* (herbs) to bewitch them. Only two households declined interviews on this basis. Secondly, my family was also worried that their enemies would bewitch me. Thereby, they emphasised that I should not eat or drink anything from households which were 'enemies' to the family.

At the community level, the limitations to the study were mainly political and security concerns. As described in Chapter 4, the political situation in Zimbabwe is one of a stalemate between two political parties, namely the Movement for Democratic Change (MDC) and Zimbabwe African National Union Patriotic Front (ZANU PF). The researcher met two challenges which were politically related. Firstly, entry to the community had to be sanctioned by the state security agencies, namely the President's office and Zimbabwe Republic Police. The study had to be delayed by about two months until clearance had been obtained from the security agencies. Permission to carry out the study also had to be obtained from the Rural District Council and the local traditional leaders. This however was executed without any problems. Permission was granted on the basis that I adopt an apolitical position.

Secondly, the association or interviewing of MDC active members was viewed with suspicion. The local ruling party activists approached me after I was observed talking to a MDC activist. I had to retreat from the study area for a period until the situation normalised, while relying on inside people for information about the status of my personal security. This too affected the timeframe of the data collection exercise.

In light of my positionality and the political situation in the Nyamakate area, I decided to stay at the local clinic. Residing at any specific household with the community would have

[33] Enemies are defined here as when individuals or families have hostilities or feelings of hatred towards other individuals or families, at times with the intention to cause injury or even death. Usually, this involves accusations of witchcraft being practiced by one party on the other.

labelled me as identifying with a particular political party. When I was visiting sampled villages, which were at a distance from the clinic, I would sleep in a tent usually pitched at the household of the village health worker. Every village in the Nyamakate area has a health worker who is a volunteer. The project was identified as a health related project, hence choosing to stay at the health workers homesteads was strategic decision and ensured my apolitical status and consistent practice.

The researcher recruited two research assistants throughout the data collection period. These assistants assisted the researcher with logistical arrangements but not with interviewing. They escorted me to targeted households as they had a detailed knowledge of the area. They also took notes in FGI. The assistants were sent on errands and helped transport the study material and camping equipment.

The research lacked adequate funding to allow for sampling of villages at a distance from the clinic. Roads were poor in these areas and required a 4X4 vehicle. Funds were not available to hire such a vehicle. The researcher had to hire a motorcycle and at times get lifts from scotch carts as shown in Plate 5.1. The transport problem resulted in relying on the use of cell phones to make appointments. This led to miscommunication in India village. When I got to the villages the health worker had summoned men and women for one session. Yet, in the research protocol females and males were to participate in different FGI sessions. In these cases both females and males participated in combined sessions (Table 5.3).

According to the research protocol eight FGI interviews had to be done. Due to the combined FGI in India village, I had to replace one FGI and purposively selected Sierra Village. Sierra Village was then considered for participation in the study because it was the closest, due to aforementioned transport issues and, it was easier to call on people while still staying in the same village. However, I had to rely on my experience in conducting focus group interviews to make sure that no single gender would dominate the discussions.

Plate 5.1 The researcher at the rear travelling to one of the inaccessible villages on a cart drawn by donkeys. *Source:* Mbereko, Alexio.

Despite these challenges, 53 interviews and eight focus group interviews were successfully undertaken between June and December 2011.

5.8 Conclusion

In order to understand the experiences and reactions of households to the impacts of HIV and AIDS and water scarcity and variability within the societal context of Zimbabwe, the study adopts a critical, constructivist paradigm. This necessitated the application of a qualitative methodology whereby knowledge was co-constructed with the members of rural households and key stakeholders A qualitative approach was selected because of its four advantages, namely: it's ability to probe deeply to capture the meaning of actors' realities, its allowance of a narrative account of people's experiences its provision for an understanding of subjects' lives within their authentic context and its valuation of subjective multiple realities.

The research utilised interviews (individual and focus group), observation and GIS mapping as methods of collecting data. Semi-structured interviews were conducted with household heads (40 interviews), key community participants (10 interviews), key institutional stakeholders (three interviews) and community members in focus groups (eight interviews). A thematic approach as postulated by Dey (1993) was used to interpret data that was gathered and determine the pattern of meaning in the qualitative data. Geo-spatial data was collected and processed using a hand-held geographic positioning system, and the data was transferred to the geographic information system from which an electronic map was created.

The researcher is an insider to the study area, due to his maternal lineage that has existed historically in the Nyamakate area and still remains permanent residents. This presented an advantage to accessing participants and gaining acceptability, but also posed a few challenges. The political climate in Nyamakate disturbed the time frame of the study as permission had to be sought from the national to the local institutions to undertake research in the area. The other challenges were of logistical nature issues such as transport. The researcher managed to collect all the data that was needed, despite challenges that confronted him.

Chapter 6: Historical, Institutional Dynamics and Political-Economic Structure of the Nyamakate Community

6.1 Introduction

Chapters Six, Seven, Eight and Nine constitute the results of this study. The findings presented in the four chapters answer the research questions presented in Chapter One. Chapter Six is the first of these chapters and it presents the history of Nyamakate and the institutional dynamics of the area which shape household's experiences of HIV and AIDS and water scarcity and variability. There is a lack of documentation of the Nyamakate history, hence Chapter Six presents the context which will be form a background for the results in Chapters Seven, Eight and Nine. Chapter Seven will present the households' experiences and understanding of HIV and AIDS. Chapter Eight will present the households' experiences of water scarcity and variability. Chapter Nine presents the combined impacts of HIV and AIDS and water scarcity on the Nyamakate households. Presenting the four chapters separately does not assume that HIV and AIDS and water scarcity do not concurrently stress households and are related. The structure, as described, is for purposes of analysis.

The study employs a number of research tools by means of which the diverse lived experiences of people and households in Nyamakate have been recorded and interpreted. These numerous experiences at times converge and at other times diverge but none are assumed as 'the universal truth'. According to Harper (2005), social systems interact unevenly across time and space, leading to the conclusion that they are complex and dynamic.

The results presented in this chapter seek to understand the following research objectives: firstly, to explore and analyse changes in the support rendered to the Nyamakate community by civil and public institutions in the context of HIV and AIDS, water resources change and scarcity, and secondly, to describe the historical, political and economic institutions,

responsible for shaping the current experience and response to HIV and AIDS and water resource scarcity and variability.

Post-structural political ecology makes the following assumptions: reality, insofar as it is invested with meaning, is produced 'discursively' through signifying practices of various sorts, nature and culture reciprocally impact on each other hence nature and culture are not separate, phenomenon should be analysed within the global local context, and focus should be placed on the constraints of the structure but also to the indeterminacies of agency and events (Escobar, 1996; Biersack, 2006; Bryant and Goodman, 2008). It is therefore assumed here that the societal structures inform the actors' experiences and understandings of the impacts of HIV and AIDS in relation to water scarcity and variability. Section 6.2 presents the changes in the governance institutions in the Nyamakate area over time. Secondly, Section 6.3 presents the current government and non-governmental institutions interventions in the Nyamakate area, and finally, Section 6.4 presents the conclusion to the chapter. Chapter Six lays the foundation for the findings presented in chapter Eight.

6.2 The Dynamics of Governance Institutions in the Nyamakate Area

This section presents an understanding of changes in political and governance institutions in the Nyamakate community framed within the national context. Political ecologists critique theories that ignore the role played by history in understanding the relationship between the natural environment and society (Escobar, 1998; Biersack, 2006). They argue that it is the interactions between society, its institutions and the natural environment over longer periods of time that result in changes in natural phenomena such as increasing water scarcity and variability (Kalipeni and Oppong, 1998). Pattberg (2007) argues that the analysis of history in political ecology serve two purposes. Firstly, history helps to place current social practices within the larger framework of historic change (Pattberg, 2007). Secondly, history sheds light on the construction of social life through the development of structure and ideational realms (Pattberg, 2007). Hence, this thesis contends that in order to understand the experiences of the Nyamakate households with HIV and AIDS and water scarcity, it is important to consider their historical, institutional and ecological contexts.

As noted in chapter four, the political history of Zimbabwe can be characterised into two epochs, namely, the colonial and post-colonial periods, during which the rural communities were on the ground situation and were subject to the policies of the day. Communal areas[34] in Zimbabwe have been administered by a dual structure, the traditional structure and the central government (Matyszak, 2012). All the ten key community informants interviewed concurred that the area currently known as Nyamakate was under Chief Dandahwa before colonisation by the British. Chief Dandahwa was of the Elephant totem[35]. Zimbabwe was formally recognised as being a colony under the British government since 1890, however effective occupation of the Zambezi valley could have taken place much later because the colonisation was not carried out overnight but gradually (Kinsey, 1999; Curtin, 2008). Before the colonisation of Zimbabwe, Chief Dandawa controlled the mid-Zambezi region, south of the Zambezi River. Chief Dandahwa used to rule with the help of sub-Chiefs from Karambazungu to Chewore and, because his kingdom was so big, it was impossible for him to effectively administer it on his own (Interview 45, 23/08/2011).

The ten community informants interviewed agreed that Chief Dandahwa apportioned part of his kingdom to Jenami of the Matemai totem. According to one of the descendants of Jenami, Jenami was given a medal as a symbol of authority over the Nyamakate area (Interview 42, 16/06/2012). Participants indicated that Jenami appointed his son to rule the Nyamakate area (Interviews 41, 42, 43, 46 and 48). It is not clear from the interviews why Dandahwa gave the territory to Jenami. Literature indicates that apportioning of kingdoms was common amongst the pre-colonial states especially for outstanding performance at war (Beach, 1986). It was a common practice in the Shona culture for a king to apportion part of his kingdom and give it to a person to rule. According to one participant:

[34] Communal areas were known as tribal Trust Lands during the colonial period.

[35] Totems are very important in the Shona culture has they define one as an insider or 'outsider' to the area. Being an outsider or an insider has implications to accessing of natural resource and traditional ceremonies (Scherr, 2000; Mukamuri and Mavedzenge, 2000; Dzingirai 2003; Nemarundwe and Kozanayi, 2003). The concept of the outsider was stronger in the past and is perpetuated in some communal areas. This concept is reinforced by the fact that so-called Shona people do not identify themselves as Shona; they identify themselves by clans such as the Karanga, Korekore, Vhitori, Manyika clans (Beach, 1986; Raftopoulos and Mlambo, 2009). As indicated in Chapter Four, the word Shona was created by the colonial government to describe people east of the Gwayi River, thus giving diverse groups one identity (Raftopoulos and Mlambo, 2009).

> … It is said that Jenami killed an elephant that had two or three hearts. So Dandahwa was impressed by how powerful Jenami was to kill an elephant with more than one heart. ...This was during the time of the Ndebele raids in the Zambezi valley. Dandahwa was impressed by Jenami's power hence he gave him land to rule. This meant that Jenami would help him defend the Dandahwa kingdom from the Ndebele raids. Furthermore, Jenami's son Matawu was given Dandahwa's daughter to marry (Interview 46, 24/08/2011).

This account demonstrates that Chief Dandahwa wanted to build an alliance with Jenami's people for military purposes against the Ndebele. The Ndebele raids in the Zambezi valley and other parts of the Shona kingdoms have been documented (Garbett, 1966; Beach, 1986, Raftopoulos and Mlambo, 2009). Marriage was also a useful tool to foster kin relations. Appendix 8 demonstrates that the current generation of Matemai people would rather cooperate and be ruled by Chief Dandahwa than Chundu, the current Chief, whom they consider an outsider[36].

Dandahwa demarcated the boundaries of Nyamakate area. The boundary was drawn from Kugwirangoma (which is beyond present day Rukomeshi River) up to the present day boom gate to Chirundu to Mt. Hambakwe, and up to Mt. Mhambwe (Plate 6.1). Chief Dandawe's kingdom started from Rukomeshi River and beyond. Matawu became the first Chief of what became to be known as Nyamakate (Interview 41, 13/06/2011).

The ten community informants agreed that the area was named after the Nyamakate River. One study participant narrated the story behind the naming of Nyamakate. He said,

> Traditionally the river was known as Nyama-mugate. The river was called Nyama-mugate because as one was travelling along the river one could ask for sadza (thick porridge prepared from mealie meal), meat, honey and milk. One could find the food under a tree in *mugate* (clay plates). If one is to literally translate Nyama-mugate, it means meat in clay plates. One had to eat from under the tree and leave the clay plates

[36] This issue will be discussed in more detail below.

> under the tree. The name Nyamakate was distorted by white people who came interviewing people, just like what you are doing today (Interview 42, 16/06/2011).

The quotation above shows how the white colonial government distorted some of the indigenous names[37]. Evidence shows that the Nyamakate was important in the lives of the people for water and its spiritual value. As noted by Garbett (1966), the lives of the Shona people are closely associated with their spirituality and spaces are often valued as shrines. Hence, moving away from the shrine and losing spirituality is believed to bring curses.

According to all the community informant interviews, the colonial government forced the people under Dandahwa and Matawu out of the Zambezi valley between 1940 and 1950 (Figure 6.1). There were two movement patterns when these rural people were forced to migrate from the Zambezi valley (Figure 6.1). Firstly, Dandahwa and his people were forced to migrate into Magunje, Charara and Sanyati areas (Interviews 41, 42, 43, 44, 45 and 50). These people who migrated under Dandahwa were mainly of the elephant totem (Interviews 41, 45 and 49). One participant testified to being relocated from the Zambezi valley. He said, "The white colonial government removed us from the area around 1948/9 and relocated us to Mutirikati, which is close to Sanyati River" (Interview 43, 22/06/2011).

Some of the community informants argue that the second group to be moved from the Zambezi valley was under Matawu, and they were settled in the present day Nyamakate resettlement area (Interviews 41, 42, 44, 47 and 48) (Figure 6.1). According to two of the descendants of Matawo, Matawo resisted being moved by the colonial government out of the Zambezi Valley area longer than the people under Dandahwa (Interview 41 and 42). With time, the whites residing in the Zambezi valley increased, and Matawo and his people were forced to move again between 1948-1950 (Interviews 44 and 46) (Figure 6.1). An old man from Mike Village asserts that the colonial government further moved these people from the Nyamakate area and scattered them throughout the Hurungwe district (Interview 44,

[37] See how the place names in Figure 4.1 differ from the Shona version of the same places in Figure 4.3. For example Kadoma was distorted to Gatooma and Kwekwe was distorted to Que que. Similarly in all places the Shona names were difficult to codify into written language, therefore, anglicised version of names were developed. However, the Nyamakate area has not been changed in the post-colonial era.

23/08/2011). The people from Matawo kingdom were forced to find land to settle under other traditional leaders and they ceased to exist as a Chieftainship (Figure 6.1).

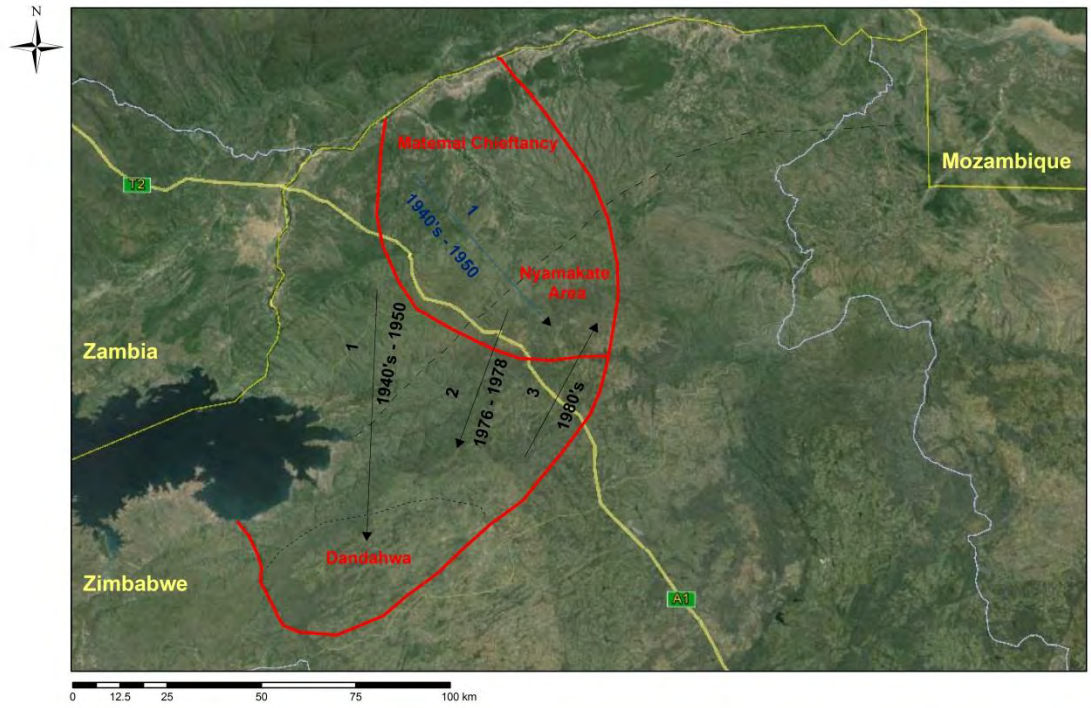


Figure 6.1 Dandahwa and Matawu people movements in the Zambezi Valley. *Source*: Mbereko, Alexio

Such forced movements of people under different states interfered with their political administration and spiritual practices. The state under Dandahwa was reduced in size but still exists up to today, unlike in the case of Matawo, where his state which was dismantled (Interview 46, 24/08/2011). The descendancies of Matawo are in a power wrangle with Chief Chundu (who originally comes from the east of the Nyamakate area) to gain control over the Nyamakate area[38]. The traditional political systems were changed as they were subjected to the centralised model of the colonial government, however large parts of the traditional political system continue to be functional e.g., the traditional court and ceremonies (Garbett, 1966).

[38] See Appendix 8

Hence, the people from the Zambezi valley had a complex spatialised political system on which the modern administrative system was imposed (Garbett, 1966). The movement into other Chieftaincies resulted in the Matemai people losing their Chiefdom, with some of these people opting to reside in Karoi town (Interview 48, 27/08/2011). The observations by Garbett (1966) concur with the contextual Chapter Four which demonstrates that the power and authority of traditional leaders has been controlled by the central government (Madondo, 2000; Ncube, 2011). It is argued here that the traditional leadership in Zimbabwe has been empowered and disempowered depending on the policies and interests of the central government of the day.

The participants provided divergent reasons for why people were moved by the colonial government. The most cited reason (8 out of 10 responses) was that the white colonial government moved people to make way for the construction of Lake Kariba. The following statements demonstrate the different views on the removal of people to give way for Lake Kariba.

> The colonial government told us that we were being moved because they needed to clear the Zambezi Valley of civilians. They believed that Lake Kariba would or might cover the area, if by accident the dam collapsed (Interview 41, 13/06/2011).
>
> People were removed from Nyamakate around 1958, the reason was that Kariba dam was going to fill up and flood the Nyamakate area. This was a lie so that people would move out with minimum resistance (Interview 46, 24/08/2011).
>
> It was thought that if the dam wall bursts, the water will flood the area. I do not think this was the actual reason, the colonial government wanted people out of here. …. The people did not resist migrating to Hurungwe because they were also afraid of the flooding waters (Interview 47, 24/08/2011).

Hence there is a common understanding that it was the colonial government that moved people from the Zambezi. As some of the testimonies indicate, people did not believe the claims by this government that the valley might be flooded. However, Coche (1971) argues that the evacuation of people from the Zambezi valley was mainly conducted by engineers and bureaucrats with very little consideration for social factors. Furthermore, the purpose of constructing the dam was mainly economic, and the environmental effects were expected to

bring positive ecological benefits from the increased diversity of the equatorial vegetation that would develop (World Commission on Dams, 2001, Magadza, 2010). Political ecologists argue that it was the prioritisation of economic benefits by the colonial government of the time that led to the unjust treatment of people for environmental and economic gains.

In addition to the fears of Kariba dam flooding the whole of the Zambezi valley, participants from the Nyamakate area argue that people were moved in order to create the Marongora/ Manapools game reserve. The following statements demonstrate the community's argument that they were removed in order to give space to wild animal conservation efforts of the government. An elderly man from Charlie Village argues that,

> We were pushed south in order to give way to the National Parks estate to flourish. Animals now occupy the area which humans had had previously occupied and lived in harmony with them (Interview 50, 30/08/2011).

Another participant from November village said,

> After everyone was moved out of the area, Nyamakate remained as a bush. The area was now monitored by the game rangers from Marongora [National Parks and Wild life Offices] (Interview 42, 16/06/2011).

Another participant argues that,

> At that time I was not staying here but my father stayed in this area. He told me that people were relocated from the Nyamakate area because the *bhunu* [white men] wanted to create a buffer zone between the farms and the game park. … Initially, it was meant to protect wild animals that might have escaped through the game fence before they get to the small-scale commercial farms in Vuti. The idea was the animals would rest and stay between the game fence and the cattle fence so that they would not go into the farms. … These farms were known as *matenganyika* [purchase land] since people who had been displaced from as far as Zvimba were afforded the opportunity to buy these farms from the colonial government. These people had been displaced in Zvimba in the 1960s. Vuti also was designed as a buffer for wild animals not to travel to the large scale commercial farms which were located immediately

> after Vuti. The large scale commercial farms were owned by whites only, while the blacks owned the small scale commercial farms (Interview 46, 24/08/2011).

Throughout history, environmental management of natural resources has adopted a protectorate approach which has been largely championed by the positivistic understanding of nature as an object (Neumann, 2005; Carter and Charles, 2010). Society and politics have been largely ignored in this approach (Atkinson, 1991; Castree, 2005; Walker, 2005). Post-structural political ecology, the approach adopted here, argues that nature is socially constructed and that it is not apolitical, since it is socially and politically produced having been subjected to political decisions (Neumann, 2005). Hence, such an approach which isolates society from the natural environment is critiqued as lacking the ability to understand the social construction of nature.

Community participants also highlighted the desire of the colonial government to establish the small scale farms (Interviews 41, 43 and 47). These small scale farms were meant to be sold out to white people. The following statements indicate that the participants believe that the government wanted to replace them with farm farmers:

> Some people who settled here [present day Nyamakate] were forced to move again in the 1960s by the colonial government. After that the white government surveyed the area and constructed boreholes so that they could put up white commercial farms. We only realised that the whites were lying to us about the flooding at this stage … This plan was not executed until 1980 at independence (Interview 42, 16/06/2011).

However, in the case of Nyamakate, the plan to create commercial farms did not work out since occupation of the surveyed farms was disturbed by the war of independence (Interview 45, 23/08/2011). The topographical map from the Zimbabwe surveyor general's office shows the proposed plots (Figure 8.2) as numbers, e.g. 180, 181, 182. The numbers are the plot numbers and the straight black lines demarcate the boundaries of the planned farms (Figure 6.2).

One participant indicated that the colonial government removed people from the Nyamakate area in order to create a buffer against the Freedom Fighters[39]. These Freedom Fighters crossed into Zimbabwe through the Zambezi River valley. A man from Kilo Village argues that, "the actual reason for moving people further inland was that [it was assumed that the] the people along the Zambezi River were going to harbour Freedom Fighters from the Soviet Union who would come through from Zambia [to the north]" (Interview 47, 24/08/2011). Hove (2012) concurs that the colonial government relocated people from the border areas of the country in order to stop civilians from supporting the Freedom Fighters.

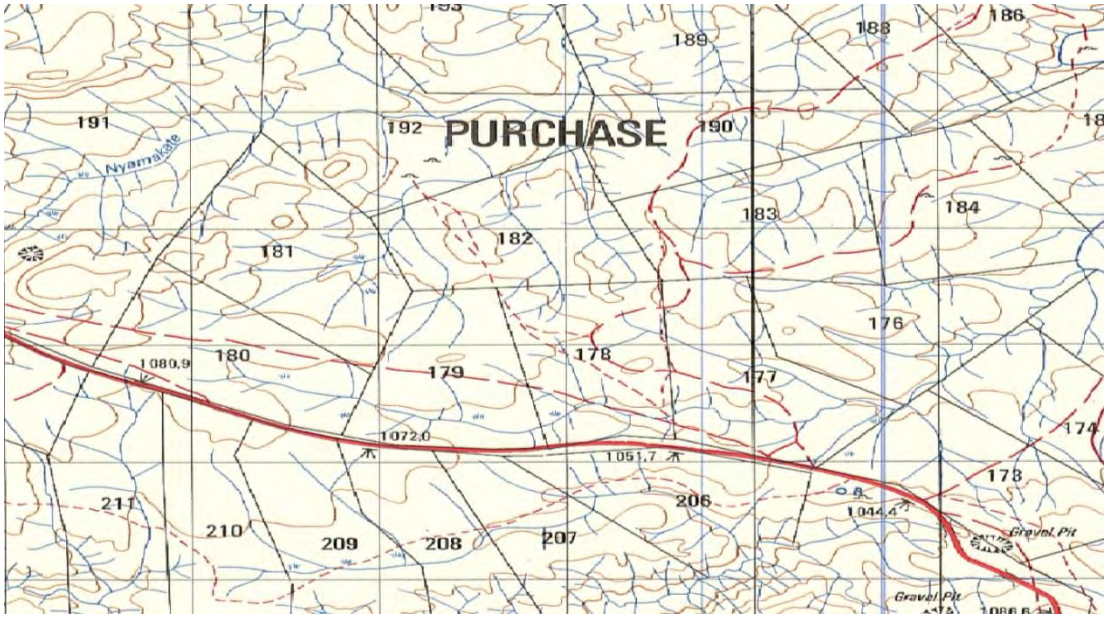


Figure 6.2 A 1978 topographical map (not to scale) showing the proposed farms. *Source*: Surveyor General's Office, Zimbabwe Government.

Thus, the Nyamakate people were forced to migrate south of the Zambezi Valley during the colonial period. These forced movements destabilised the traditional leadership structure and the associated spiritual cults. By the end of colonialism in 1979, the Nyamakate area was not inhabited by people.

[39] The Freedom Fighters were black people who went to train as soldiers in neighbouring countries so that they could come back to Zimbabwe to fight for the country's freedom from white colonial rule.

All the ten community informants agree that people started moving back to the current location of Nyamakate after independence in 1980. Furthermore, this was their own initiative and they settled illegally and were called ‘squatters’ by the government structures. Literature indicates that the invasion of state and unused land was common in Zimbabwe during the first decade after independence (Moyo, 2001; Alexander, 2003). Moyo (2001) notes that, in most cases, the squatters did not receive support from the central government structures in the country. The post-colonial government attempted to drive these people out of the Nyamakate area by burning down their shelters. However, people would erect new structures after the police left the area. One participant who was part of the first family to ‘squat’ in the Nyamakate area narrated his experiences.

> After April 1980, we moved into the Nyamakate area the next month. We settled where Papa village is currently situated. The National Park’s rangers and scouts who were passing by noticed smoke coming from our cooking place and they came to investigate. It was around the time when Mugabe was calling upon the Freedom Fighters to come and surrender their weapons as the war was over. The game officers approached my father when he was under a tree making axe handles. One officer appeared first while others laid an ambush. When he got there he saw fowls and my mother in the yard. He came and exchanged greetings with my father. He inquired from my [participant’s] father why our family was settled here and where we had come from. So my [participant’s] father told him that he was named Kachingamire from Pfuche. So he asked how many are you? So my [participant’s] father told him that he had only come with four members of his family but others will come in the near future. So the other scouts who were lying in ambush observed that these people were discussing and there was no threat, so they came out in the open towards my father. … The scout queried my father if he was aware that no one was allowed to settle in an area without the authority of the Chief or headman. … My father informed them that no one granted him permission to settle in the Nyamakate area. He told the scouts that even they knew that during the war we were all in agreement that after the war everyone will settle were they wanted. You also know that during the war our Chiefs and headmen were killed and others ran away so I just thought of coming to settle here because there is no one to allocate for my family were to settle. I have decided to settle close to the road so that government will quickly see that there is a family that is staying here and they can help me. So they [the game officers] did not

> do anything they just went away and promised to come back (Interview 50, 30/08/2011).

The above response demonstrates the actors' agency in an effort to attain a decent livelihood. This family migrated to where they thought their livelihoods would improve. Literature from post-structural political ecology has demonstrated how the local actor can respond to the macro-structures in subtle ways (Scott, 1985; Few, 2003)[40]. Although the actor has agency, the structures are important because they determine to a large extent the political and economic context within which actors undertake action (Castree, 2002; Harvey 2003). It was, however, societal structures that limited the local actors' access to the natural resources in the Nyamakate area.

After the settling of the first family, people started relocating to the Nyamakate area especially those from the Hurungwe district. As noted, the resettlement in the Nyamakate area was in two phases[41]. In the first phase, community participants highlighted a number of reasons as to why they decided to relocate to the Nyamakate area. Most of the community participants indicated that they came because of the good farming land. The other reasons included claiming traditional land and the realisation that Lake Kariba was not going to flood the area. The three responses below provide evidence for these reasons.

> Other people and my family returned to the Nyamakate area from the Hurungwe area in 1980. We realised that the dam was not going to burst and people came back one by one. We were then labelled as squatters by the government officials (Interview 47, 24/08/2011).

> We came here because we wanted to farm. We were coming from the farms where we used to work as labourers. When people relocated to this place everyone settled where

[40] Although Scott (1985) was not a political ecologist he provides a powerful cross cutting analysis of the subtle methods the poor use to resist and respond to the conditions imposed on them by the powerful societal structures. According to Scott (1985), these forms of resistance are effectively that which stimulates uprisings and revolutions. Other structural political ecologists, such as Neumann (2005), appreciate his argument that recognises that the actor has agency.

[41] See Chapter Four Section 4.2

> ever they wanted[42]. ... At times I would not even know my neighbours except for my friends (Interviews 49, 30/08/2011).
>
> In 1980, people wanted to go back to their traditional area. People started relocating to the Nyamakate area. We only failed to claim our land that was incorporated into the National Parks area as we wanted it (Interview. 46, 24/08/2011).

It can be inferred from the account of the first families to settle in the Nyamakate area that some people went there because they did not have anywhere else to go. The colonial government had over-concentrated the tribal lands resulting in resource depletion. The war had destabilised the local structures hence rendering many people landless, especially those who had cooperated with the white institutions during the war period. The 'vacant' area of Nyamakate created a window of opportunity for people to relocate there. As noted in the background chapter, the land politics used to mobilise support for the war could have stimulated the squatters to occupy the area. As noted by community respondent 44 (23/08/2011), "The government [Mugabe] got us back our land ... they promised that we would have our land [during the war]". This mentality throughout the country was problematic for the government as they wished to resettle people in an orderly manner (Moyo, 2001; Alexander, 2003).

Before the formal resettlement started, the household head of the first family illegally allocated land to other squatters. Traditional spiritual institutions were utilised in authenticating the land allocation process. As noted by Garbett (1966) the spiritual cults are highly valued by the Shona. One study participant, in narrating how she was allocated land, said,

> Kachingamire used to be our leader. So when you came from wherever, you had to report to him if you wanted to settle in the area. He would take you around the Nyamakate area until you found a place that satisfied you. He would take some snuff and mealie meal and leave it under a tree close to where you think you want to build your homestead. The following morning Kachingamire and the prospective settler would come to check the mixture of snuff and mealie meal. If there was nothing

[42] When this respondent is saying "where they want…" she means that you could nominate any place where you desired but the final homestead area was determined by elders after a ritual. There was a *de facto* spiritual process conducted by the elders to select who settles in the area. This process will be discussed below.

> unusual about the mixture he would thank the spirits. This meant that the prospective settler has been accepted by the spirits of the land and they could settle (Interview 49, 30/08/2011).

The government started formally recognising the resettlement of the people in the Nyamakate area in the mid-1980s. All participants agreed that people from all over the country were officially resettled in the Nyamakate area. Barr (2004) recommended that planners in resettlement programmes should pay attention to the ethnic mix and kinship ties amongst resettled villagers in order to foster effective civil activity and participation in governance. The government resettlement planners ignored the importance of such ethnic and kinship ties and the power of spiritual cults.

The government took over from the *de facto* governance structure in 1982 and became directly responsible for the management of the Nyamakate resettlement. Every resettled household was allocated a four hectare plot to farm on and a homestead area (Interview 46, 24/08/2011). All the ten community participants concur that the government replaced the traditional leadership structures and instituted a new system of appointing presiding officers. Thus, the government adopted a deliberate policy of reducing the power of the traditional structures replacing them with government appointed officers (Makumbe, 1998). There were a lot of unmet promises by the government, some rural communities and their traditional leaders, hence Chiefs were not viewed as pro-government at the time and the central government reduced Chiefs power. The decline in the power and authority of the traditional leaders also affected the traditional religion.

The Shona speaking people from the Zambezi valley had always had two major components to their political and social systems: one is the political organisation of the Chiefs and kings and the other is the politico-religious system managed by spirit mediums (Garbett, 1966). The illegal squatters acknowledged and respected the politico-religious system, unlike the government when it resettled the people without consulting the ethnic and spiritual leaders (Interview 48 and 50). This legacy has created conflict between local people who believe in the traditional system and the presiding officers of the area.

The Matemai clan that previously presided over the Nyamakate area was marginalised from the new administration. The government appointed a presiding officer who was assisted by the Ward Development Committees (WADCO) and the Village Development Committees (VIDCO)[43] to govern the Nyamakate area. The presiding officer was elected by members of the community. Nyamakate is unique when compared to other rural areas in Zimbabwe in the sense that it is the only area that does not have a pronounced traditional leadership system[44]. But the spiritual cult of the Matemai people exists, and it is fighting for the reinstatement of the traditional leadership under Matemai clan. For the first 20 years after independence, Chiefs nationwide existed side by side with VIDCOs, however, the former were deliberately marginalised by government, and their relationship to the elected governance structure is not clearly spelt out (Sibanda, 1990; ZHDR, 2000). The colonial government had employed indirect rule through the Chiefs to rule the populace (Madondo, 2000). After independence, the Chiefs were disempowered as a way of punishing them for cooperating with the colonial government in favour of the elected officials (WADCOand VIDCO members and the presiding officer) who were political appointees. At that time the officials were more trusted than the Chiefs (Madondo, 2000; Ncube, 2011).

In 1997, the government of Zimbabwe changed its policy and disempowered the presiding officers, WADCOs and VIDCOs and empowered the Chiefs and village heads as traditional leaders (Ncube, 2011). The traditional leadership structure was empowered and remunerated. This move is believed to have been carried out in order for ZANU PF to garner political support in rural areas, which constitute the traditional support base of the ruling party (Ncube, 2011; Makwerere and Mandoga, 2012). The empowerment of traditional leaders comes within the context of strengthening opposition politics, with youths and the middle class moving increasingly to join opposition parties (Ncube, 2011). The local government approached Chief Chundu to select and install village heads and reinstate the traditional leadership structure (Interviews 41, 4 2, 45, 47 and 50). With the infiltration of opposition political parties in the rural areas, plus decreasing faith in the VIDCOs, the traditional leaders were a better ally to government, hence they were elevated and empowered to administer the

[43] As described in Chapter Four, the WADCOs and VIDCOs were appointed throughout the country and these acted as ZANU PF agents when it suited the government and party (Matyszak, 2012). The presiding officer is not a nationwide appointed post, but is unique to the Nyamakate area. The Rural District Councils Act [Chapter 29:13] allows the Minister of Local Government to establish posts and appoint an incumbent.

[44] As alluded to earlier in this chapter, the traditional leadership system ceased to exist when the people under Matawo were relocated from the area and scattered throughout the Hurungwe district.

rural areas (Ncube, 2011). The state in any country has the role to promote the collective interest of people and the environment (Bryant and Bailey, 1997). However, from the evidence above, it appears that in this case the state has manipulated the grass root institutions for political interests.

The empowerment of the traditional leadership resulted in latent conflicts becoming active. The Chiefs in Zimbabwe are given cars, fuel and money by government (Ncube, 2011). In the Nyamakate case, as presented above, the traditional system in the Nyamakate area was destroyed, and this created a vacuum. All the community informants reported that the government had subsequently placed the area under Chief Chundu who is an outsider to the area. This move has created conflicts between Chief Chundu and the Matemai people. A community participant, who is involved in the leadership conflict as a spirit medium, narrated the nature and causes of the conflicts over leadership and how it affects water resources and livelihoods in the Nyamakate community (see Appendix 8 for detail).

All community informants interviewed expressed disgruntlement over Chief Chundu ruling over Nyamakate, which they felt belonged to their ancestors. The statements below demonstrate the bitterness expressed by the elders over being ruled by Chief Chundu.

> The government made a big mistake in approaching Chief Chundu to preside over the Nyamakate area. Currently as we speak, Chief Chundu has appointed headmen throughout Nyamakate. Culturally, the area belongs to Chief Dandawa, hence he is the rightful leader to enact village heads. The appointment of these headmen has sparked conflicts and arguments during ward meetings. Chundu and Dandawa have been engaged in a terrible dispute over this issue (Interview 41, 13/06/2011).

> The leadership is not clean because of the high salaries being paid to the Chiefs by government. People [government] now appoint Chiefs before they consult the seniors in the clan and the spirit mediums. This is emanating from the young leadership that considers academic qualifications rather than indigenous knowledge. The young people in leadership ignore us but when things do not work well that is when they look for us (Interview 42, 16/06/2011).

These two quotations demonstrate the frustration that the elders of the Matemai family have over the empowering of Chief Chundu to rule the area. In the Shona custom, for a Chief to be

appointed, all the houses of the founder of that state and spirit mediums are consulted (Garbett, 1966). Such an imposition by the government in appointing an outsider has created a problem for the local actors. As evident in the first quote, the government's imposition of Chief Chundu on the Nyamakate area negatively affected a ward community development meeting. The evidence shows the relationship between the spiritual world and the traditional leadership, and emphasises the importance of this traditional societal structure on development (Garbett, 1966, Munjeri, 1995).

As a response to the conflicts for traditional leadership hegemony over the Nyamakate area, parties to the conflict turn to their spiritual resources. An example is the appearance of lions[45] in the area in 2003. This was blamed on a spirit medium called Murimbika (Interview, 42, 16/06/2011). The Matemai spirit medium performed rituals in order to appease the spirits and the lions were not seen again in the area (see Appendix 8). The spirit mediums from other places cannot conduct the traditional ceremonies of the Nyamakate area as this is viewed as angering the local spirits (Interviews 41, 42, 47 and 48).

Chief Chindu's reported response in one of the meetings was that the ancestor's graves had been relocated away from Nyamakate and therefore the spirit mediums are guardians of 'nothing' in the Nyamakate area (See appendix 8). Such contestations for legitimacy at the local level are important as they inform access to natural resources (Scoones and Cousins, 1991; Abu-Lughod, 1988; Sikor and Lund, 2009). These conflicts at the local level are linked to the legacy of the policies of both the colonial and post-colonial government. The state in both cases attempted to control events at the local level for political and economic benefits.

This section has analysed the dynamics in the governance of the Nyamakate community from pre-colonialism to present day. The Nyamakate state was traditionally under Matawo of the Matemai totem. The colonial government destroyed the state and people migrated south. At independence in 1980, people started relocating to present day the Nyamakate area. They

[45] In the Zambezi valley, appearances of lions that behave in unusual ways (especially targeting humans as prime targets) are associated with anger of the spirits. Not any ordinary traditional healer can solve this problem; they consult a *Mhondoro* (literally translates to Lion) spirit medium to appease the spirits (For more information the types and roles of traditional spiritual mediums see, Gelfand, *et al.,* 1985).

did not have a formal traditional governance structure and they relied on the guidance of a spirit medium. Thereafter, the government of Zimbabwe formally resettled people in the Nyamakate area in the mid-1980s. Government appointed a presiding officer and governed with the help of WADCO and VIDCOs. There is currently a leadership crisis as the government appointed a Chief from a neighbouring area to preside over the Nyamakate area. The Matemai people are claiming back their Chieftaincy. With the lack of legitimization for, Chief Chundu's leadership, development has started to suffer as people now discuss leadership problems in their development meetings.

6.3 Institutional Dynamics of the Nyamakate Area

The institutional contexts of rural areas in sub-Saharan Africa are complex and highly dynamic, hence an understanding of the power and politics is necessary (Scoones, 2009). Scientists, developments agents and government institutions have power over ideas at varying scales and this creates a politics of knowledge. This is transformed into policy, programmes and development practices which become implemented and applied at the village level (Escobar, 1998; Neumann, 2005; Scoones, 2009). A number of studies have shown that rural areas in Zimbabwe have multiple institutions that include government, non-governmental and traditional structures (Sithole, 1999; Mbereko, *et al.,* 2007). The strength of the political ecology approach is in linking phenomenon at the local scale to the macro-scale structures (Kalipeni and Oppong, 1998). This section presents the institutional complexities and dynamics in the Nyamakate area. The responses from participants suggest that the Nyamakate community had interacted with government departments and non-governmental organisations at different times throughout their history and at varying political levels.

This thesis contends that power and politics are the major determinants of livelihood outcomes, hence an analysis of politics should go beyond the immediate context to critique the structures of inequality that inform the reality of the social actor (Scoones, 2009). Even after independence in Zimbabwe, the state continued to centrally control natural resource use and development programmes in rural areas (Makumbe, 1998). As presented in chapter 5, the interaction of the Zimbabwean government with rural communities differed during each epoch as did the prevalent policies at the time. Most of the participants indicated that the

Nyamakate community had close relationships with government ministries in the early 1980s. It was reported that at this time three ministers (S. Sekeramayi, M. Mahachi and R. Manyika) visited the Nyamakate area and helped to facilitate the Nyamakate resettlement area being legally recognised (Interviews 41; 44; 45; 47; 48; 49; 50). The ministers discouraged the Nyamakate people from hunting animals in exchange for their help in the resettlement process and the provision of food (Interview 47, 24/08/2013). This move on the part of the government was a blessing in disguise, in that the government did not have to purchase this land from any farmer and at the same time was able to gain political mileage. Chapter Four demonstrated how the government had a large backlog in resettling landless blacks in order to reduce the inequality between blacks and whites in the new regime. The land question in Zimbabwe has been closely associated with threat or support of the government by the masses (Masilela and Rankin, 1998; Kinsey, 1999: Moyo, 2001).

The head of the first family to squat in the Nyamakate area was nominated by the ministers and the District Administrator to be the leader and see to it that there was a register of names, and that people were not hunting animals (Interview 50, 30/08/2011). The following accounts demonstrate how the ministers interacted with the Nyamakate community between 1980 and 1988.

> … Minister Cde Sydney Sekeramayi and others came to address us after we had settled illegally in the Nyamakate. … It was agreed that people can move back into their traditional area but they had to agree to a new resettlement scheme programme … There were a lot of problems - the resettlement was not an easy process. The District Administrator was still white and he resisted having the area put under the resettlement [programme]. He argued that the area was infested with tsetse fly and it is close to the game park (Interview 46, 24/08/2011).

This quotation demonstrates that government ministers did engage with the grassroots people to attend to their concerns. The ruling elite practised populist development policies hence such contact with the local communities was one of their strategies to garner support (Moore, 1991). Even with such policies, the inequalities been blacks and whites were embedded in the structures and such an approach could not change the status quo (Moore, 1991).

The government provided services to the rural areas which had been grossly neglected by the colonial government (Alexander, 1994). These services were delivered by the Department of Rural Development (DERUDE). Development of the Nyamakate area over the next decade from 1980 by government took many forms of food hand-outs, the construction of roads, the building of a primary school and the drilling and mounting of the boreholes in the new villages (Village 1 to 32) (Interview 46, 24/08/2011). The Department of Tsetse Control had erected boreholes in the villages along the game fence since they used to come and camp in those areas before people moved back into the Nyamakate area (Interview 46, 24/08/2011). According to one of the local health workers, the government, with the help of a non-governmental organisation, built the clinic and provided staff to run it (Interview 52, 05/12/2011). DERUDE constructed the roads and drilled boreholes in the newly resettled villages (Interview 47, 24/08/2011). Furthermore, the government handed out food packs to all the villagers during the first year after resettlement, and the hand-outs were composed of beans, kapenta, maize meal and rice (Interview 45, 23/08/2011).

Much of the development in the Nyamakate area by the government occurred in the 1980s. In the 1980s, the government policy was juggling mid-way between capitalism and Marxism ideologies (Moore, 2003). The important issue is that it had an element of distributive welfarism and a desire to address the colonial inequalities among the races and classes, and hence created a policy framework for the type assistance rendered to the Nyamakate community within this period. However, after 1990, the government of Zimbabwe adopted a liberal policy and implemented the neo-liberal Economic Structural Adjustment Programme (ESAP). Government then cut spending in all other sectors except for health and defence (Sachikonya, 2002; Brett, 2005).

According to Moyo (2001), rural development within a neoliberal framework has been dominated by the provisions of funds for small-projects aimed at selected beneficiaries, who are usually from the middle class. Therefore, there was a decline in government aid in rural areas of Zimbabwe after the adoption of the neo-liberal economic policy in 1990 (Moyo, 2001; Sachikonya, 2002; Brett, 200; Mawowa, 2008). The community informants provided evidence of assistance from government before 1990, however, most of the interviewed participants (27 out of 40) stated that the government has not contributed to the development

of the Nyamakate community since 1990. Those who did identify assistance from the government indicated that the clinic, maize seed and fertilisers had been provided to the area occasionally from 1990.

All the study participants alluded to benefitting from the Ministry of Health and Child Welfare through the Nyamakate clinic. The clinic is staffed by two nurses, one environmental technician and two nurse assistants. A worker at the clinic summarised the duties of the clinic in Nyamakate as follows.

> We deal with health as our primary function and the Environmental Health Technician (EHT) deals with environmental health. For example, when there is an outbreak of diseases, such as malaria and diarrhoea, within a village the EHT goes to investigate the [the disease causing organism's] potential breeding sites and eliminates them (Interview 51, 05/12/2011)

The clinic only deals in primary health care. Three of the five staff members complement is trained personnel. The clinic is administered by the Karoi District Hospital which is a state institution and thus falls under national government policies. The operations of the clinic are governed by the Health Professions Authority of Zimbabwe[46].

Observations during the study (between June and December 2011) revealed that a doctor comes from the Karoi District Hospital every month to manage the distribution of anti-retroviral drugs (ARVs) and examine the condition of patients on drugs. The community is well informed about the visit of the doctor and they visit the clinic on these occasions or bring their relatives to receive the anti-retroviral drugs. All representatives of the HIV and AIDS affected households sampled for this study testified that their patients were receiving treatment and support from the clinic. During the period of the study, the Ministry of Health and Child Welfare conducted an anti-malarial campaign (larvacide treatment). An older woman from Hotel village confirmed that households within the Nyamakate area had received mosquito nets and that their homesteads had been sprayed (Interview 25, 19/09/2011).

[46] The guidelines and regulations can be obtained on this website http://www.hsb.co.zw/regulations-and-policies.htm [Accessed: 07/08/2013]

With the volatile political and economic situation in Zimbabwe, the provision of ARVs to marginalised communities is important. Globally, it has been documented that pharmaceutical companies neglect the poor as they cannot afford the drugs (Biehl, 2011). However, drugs are only ancillary to the full treatment of the disease (Biehl, 2011). The medical drugs are being administered to people in Nyamakate who are vulnerable due to poverty, food insecurity and depleted natural resources, and hence the efficiency of treatment is compromised (Barnett and Blaikie, 1992; Biehl, 2011; King, 2012).

There are factors that limit the effective delivery of health care within the Nyamakate area. Participants indicated the lack of medicines and in some villages of the Nyamakate area, households do not have easy access to health centres which are far away. In all the FGIs, participants indicated that drugs are in short supply and at times the village health workers do not even have pain killers. The clinic at the shopping centre is not easily accessible to villagers beyond the Rukomishi River because of the distance. A participant indicated that they are some people who have to travel for about 35 kilometres to the clinic (Interview 2, 24/11/2013).

Since 1980 to date, the state has handed out agricultural inputs or subsidises for agricultural inputs to rural communities in Zimbabwe (Sachikonya, 2002; Rohrbach, *et al.,* 2005[47]). According to one stakeholder sampled in the study, the government supplies agricultural inputs with the aim of distributing them to the most disadvantaged farmers (Interview 53, 07/12/2011). This philosophy of addressing the social class inequalities by assisting the most disadvantaged relates to the welfarism policies of the first decade after independence that was characterised by elements of distributive equality (Moore, 2003). In the current context, the reality on the ground in relation to the distribution of state benefits demonstrates a different picture characterised by corruption and favouritism based on affiliation to the dominant political party.

[47] http://oar.icrisat.org/328/1/CO_0007.pdf [accessed 28/07/2013]

During the study period, the government distributed maize seed and fertilisers in Nyamakate area. The seed allocation process was a source of dissatisfaction in the area since there was an inadequate supply to provide for every needy household (Interview 53, 07/12/2011). Although it was not possible to establish how many households in the study area benefitted from this process, a number of the participants noted that the seed was selectively distributed, giving priority to senior ZANU PF members living in the area. Other limitations to accessing inputs distributed to the community from the government include the withholding of information by the few who would have learnt of maize seed and fertilizer distribution, the inability of older people to walk to the distribution point, and the sense of futility among those who have given up trying to access this benefit because of repeatedly not getting it (Interviews 7; 13; 21; 23; 40; 23).

The participants who commented on why government was not assisting all people in Nyamakate justified this in terms of the economic crisis being experienced by government. The following statements present different feelings and experiences of some of the residence of the Nyamakate area:

> … the government is broke hence it cannot provide the spare parts required to repair the boreholes (Interview 10, 22/09/2011).

> We do not receive help from government anymore. Long time ago my son's [school] fees were paid by the department of social welfare but these days it does not pay for him anymore. When I went to the school to enquire [why they were not paying fees for the son] I was informed that they were waiting for money to be disbursed by government for some time, and that the school fees will be paid when the funds come. But this has been more than four years now. I think the government does not want us to think they do not have money because people will not vote for them (Interview 32, 23/10/2012).

> People have to understand that government does not have money to solve all the problems in the country. The council has advised that the borehole chairman and his people have to make their own arrangements and meet the costs of going to collect pipes from Magunje (Interview 8, 19/09/2011).

These statements provide evidence of the government's lack of funding for a number of services including borehole maintenance, provision of agricultural inputs and social services. All three accounts refer to the fact that government is failing to provide support for the Nyamakate community, hence leaving them to cope using available natural and social resources. Political ecologists argue that, because the poor are marginalised and lack social resources, they end up over exploiting the natural resources and hence degrade them (Watts, 1982; Blaikie, 1985; Castree, 2001).

The national government of Zimbabwe embarked on a rural electrification programme from as early as the 1980s (Mapako, 2005)[48]. In the 1980s, the emphasis was on the electrification of growth points throughout the country, however, through an act of Parliament in 2002, the Rural Electrification Agency was instituted and specifically tasked with elecrtrifying rural communities (Mapako, 2005). In the Nyamakate area, it was observed that Juliet Village was the only one with electricity connection points, while a number of households there were linked to the electricity grid. One participant said "Government assisted us to get electricity. We paid 40% of the costs and it paid the balance. …. electric lines in this village were put in around August 2010" (Interview 37, 11/11/2011). No explanation was given as to why, in the Nyamakate area only, Juliet Village was electrified. However, it should be noted that the Councillor of the Nyamakate area lives in Juliet Village. It was also observed[49] that the two shopping centres, clinic and school are also electrified. These community centres were electrified much earlier than Juliet Village which was electrified under the Rural Electrification Agency programme (Interview 53, 07/12/2011). Rural electrification programmes have the potential to conserve natural resources and improve people's lives, but in the current economic crisis, the role out of this programme remains limited.

Some of the study participants declined to comment on the level of support provided by the government due to the sensitivity about criticising the government in the current Zimbabwean political climate. Passing any negative comment about the government can result in victimisation especially during election times (Makumbe, 2006). In one focus group

[48] Presentation on the Grid and Off-grid Rural Electrification and Poverty Alleviation: Lessons from Zimbabwe in Maputo in 2005 *www.e4d.net/euei/.../Mapako_Zim%20presentation%20Maputo.ppt* [accessed 28/07/2013].
[49] Observations were made between June and December 2011

interview, a middle aged woman, when asked what she thinks the reason is for the lack of government support, said, “It is a problem to answer here so you should talk to males” (FGI 1, 24/11/2011). In other FGIs in which men participated, the participants felt that they were not at liberty to discuss government failures and ended up diverting the discussion to talk about sanctions on Zimbabwe by the European Union (FGI 4; 6; 7; 8).. The first quotation sheds light on the gender inequality that exists in the community as men are viewed as more knowledgeable on important issues. Feminist political ecologists blame this on inequalities resulting from capitalism and transmitted to the grassroots of society through the labour market (Reed and Christie, 2009). But in both cases, participants are avoiding the question which indicates that people fear discussing government failures.

The above evidence shows that the Nyamakate community is aware of the withdrawal of support from the national government. According to the Zimbabwean Constitution, all District Councils are mandated by central government to provide services and develop communities under their jurisdiction. As presented in Chapter Four, the Nyamakate community falls under the Hurungwe Rural District Council (HRDC). A number of participants reported the lack of support from the district council as well. The following statements illustrate the decline in benefits realised by the Nyamakate community from the Council.

> In the past Council used to repair and maintain boreholes, but at the moment council is failing to help us. … things are generally hard in the country at the moment (Interview 6, 16/09/2011).
>
> …Council assists us with repairing of boreholes. When our borehole breaks down, we get pipes and other parts from the Rural District Council (Interview 24, 15/10/2011).
>
> When our borehole pipes developed holes due to rust, we took all the nine pipes to Hurungwe Rural Council for replacements. But out of the nine we were given three new pipes only. We just looked around for two second hand pipes and repaired the borehole (Interview 4, 15/10/2011).
>
> Currently our village borehole is operating with only three pipes instead of 12. The last time you [the researcher] came, there were pipes at the HRDC offices in Magunje [About 60 kilometres south west of the Nyamakate community] but we heard of the

> information late so our village did not benefit. As a result we did not get pipes. We are just waiting for anyone to assist us with pipes, [laughing] can you assist us? (Interview 15, 27/09/2011).
>
> Council conducts HIV and AIDS awareness campaigns and condom distribution. This is done by our social services department (Interview 53, 07/12/2011).

From the statements above it can be deduced that Hurungwe Rural District Council (HRDC) has assisted Nyamakate community to a degree by providing borehole equipment and condom distribution. Comparatively, it could be argued that the HRDC provides more support to the community because of the ability of local authorities within the Zambezi Valley to access funds from programmes such as CAMPFIRE[50] (Frost and Bond, 2008). However, by and large, the condition of any rural Council in Zimbabwe reflects the national situation since they depend on funds from the government (Mutizwa-Mangiza, 2006). However, some of the villages did not benefit from the distribution of pipes for three main reasons. Firstly, the HRDC offices are far from the Nyamakate area. Secondly, the information did not reach the intended beneficiaries in time. Thirdly, the HRDC required that the old pipes be transported to Magunje and exchanged for new ones and this requires money and transport which is not always available.

A number of participants were critical of service provision by the HRDC. The following statements illustrate their views about the operations of the council.

> In the past, Council had the responsibility of transporting borehole equipment and maintaining it. That is the reason why there is a Councillor and we pay levies. Council vehicles should bring the pipes to use it is not for us to hire a car, that is the duty of the Council vehicles, not just driving around doing nothing meaningful for the people (Interview 5, 23/08/2011).
>
> … but at the moment Council is failing to help us. The economic situation is bad this is why Council is failing to assist us with our water problem. DERUDE had surveyed a dam close to Fox Village but the funds were not there (Interview 6, 24/08/2011).

[50] CAMPFIRE stands for Communal Areas Management Programme for Indigenous Resources.

> I think the Council is being over loaded because of the high demand of services in relation to the resources available (Interview 4, 14/09/2011).
>
> … they have left the responsibility of the development of communities to donors, since the Council does not have funds to help us. Currently, we are getting nothing from government or from the Council (FGI 6, 08/12/2011)

Three key stakeholders from the area stated that the HRDC is currently experiencing financial difficulties and they were therefore not providing the social services as expected. Two reasons were raised in interviews as to the reason for Council failing to provide social services as mandated. One of the key stakeholders interviewed said, "Help to the community is now minimal because of sanctions and economic hardships. The sanctions and economic hardships forced government to stop giving out grants to local authorities for community development" (Interview 53, 07/12/2011). There is widespread understanding in the Nyamakate area that both the national government and the HRDC are in economic crisis and this is having a detrimental impact on the welfare of local rural households.

The second reason why the council is failing to provide adequate support to the Nyamakate community is that some of the Council officials (in the past) were corrupt[51] (Interview 52, 05/12/2011). One study participant said, "The Council leadership at that time was corrupt and they abused resource meant for development projects and social services" (Interview 52, 05/12/2011). It was interesting to note that, despite the limitations that the HRDC was facing, it had made plans for development projects for Nyamakate community (Interview 53, 07/12/2011). An HRDC member explained that the following projects had been halted borehole sinking and maintenance, construction of weirs dams and construction of two dams (Interview 53, 07/12/2011).

In addition to government, there is evidence of the intervention of Non-Governmental Organisations (NGOs) in the Nyamakate area. NGOs link the local to the global level in development and natural resources policy and programmes (Bratton, 1990). Bryant (1991) argues that even if a state wants to promote sustainable development it might not be able to if

[51] The participant refused to provide in-depth information on the particular form of corruption, when the Councillors exited office and what prompted them to leave their office.

it is pressured by big NGOs, as both the state and NGOs derive legitimacy and power over society through development projects. Political ecologists make a distinction between development NGOs and the Environmental Non-Governmental Organisations (ENGOs) (Bryant and Bailey, 1997). The ENGOs' rise is based in the increasing power and assertiveness of the 'civil society,' and they fight for social justice through equitable access to the natural environment (Bryant and Bailey, 1997). Development NGOs might promote sustainable environmental use, but their prime business lies in health care, education or famine relief and other humanitarian projects (Bryant and Bailey, 1997). From the evidence, the Nyamakate community has been supported by development NGO only. Bratton (1990: 90) argues that.

> The organisational landscape in rural Africa is dominated by the political and economic monopolies of the post-colonial state. These institutions take various forms: closed and uncompetitive political parties, centralized and overly bureaucratized extension services, or inefficient parastatal and co-operative marketing agencies. Paradoxically, while these monopolies claim an exclusive political legitimacy, their performance is generally weak.

Bratton's (1990) argument sheds light on the political economy of rural areas in Africa where NGOs are added as another layer and are at times more frequent in their interventions than the government. He notes that NGOs are often in competition with the state over legitimacy in the same rural space. As argued above, the Nyamakate institutional landscape is dominated by the state.

Non-governmental organisations (NGOs) have operated in the area since the 1980s to date in two phases: before 1990 and after 1990 to date. In the first phase, the 'Freedom from Hunger Campaign[52]' was identified by nine out of the ten community informants as the first NGO to operate in Nyamakate resettlement area. The Freedom from Hunger Campaign provided agricultural inputs and implements. A community informant summarises the help offered to the community by Freedom from Hunger campaign:

[52] Freedom from Hunger Campaign was a United Nations programme that aimed to promote rural development and focus mainly on agriculture, health and education source: https://www.unodc.org/ngo/showSingleDetailed.do?req_org_uid=2474 [accessed 29/07/2013].

> We were helped a lot by Freedom from Hunger campaign in the 1980s. They looked for money from the German government and they gave the government and District Development Fund (DDF) a lot of money to help us. The assistance from Freedom from Hunger Campaign included development of the township, clinic, school and bridges and people got 56 bags of fertilisers per household. They also bought three tractors, and their equipment like ploughs, discs. … The remains of the other one are by the bar up there. The problem was that the leadership at the time misused these tractors and it became a problem to repair these tractors (Interview 45, 23/08/2011).

There was a general understanding amongst the participants that aide from NGOs has been declining from mid-1990s to the time of data collection in 2011. NGO activities declined in Zimbabwe after 1987 in response to the political situation in the country, and withdrawal of donor funds in response to the sanctions (White and Morton, 2005). Since 2005 to date, the Nyamakate community has received sporadic help from World Vision, LEAD, Mvura/Manzi and GOAL. These organisations are based in the town of Karoi. Not everyone benefits from their programmes; for example, Mvura/Manzi constructed two toilets at two households in a village with more than 40 households (Interview 52, 05/12/2011). At a community level Mvura/Manzi has provided cement to protect wells. I observed that more than half of these wells were poorly sited and were not producing water at the time of the study between June and December 2011. One of the HRDC members explained the operations of Mvura/Manzi in Nyamakate:

> Their main area of operation was water and sanitation. They dug 35 deep wells and 69 toilets in Nyamakate. In their selection [of beneficiaries] they also managed to capture orphans. The siting of wells was not scientifically done, they would use the traditional methods of using sticks or wire, and hence most of the wells are dry. Some of the wells were protected using cement and bricks. Mvura/Manzi is no longer operational in Nyamakate and Hurungwe as a whole (Interview 48, 27/08/2011).

At a micro scale, the aim of GOAL was to distribute food to selected community members. One of the health workers explained the recruitment criteria for GOAL food beneficiaries:

> GOAL is giving out food hand-outs to patients especially those who are on the ARVs programme. We, the health workers, identify under-weight and malnourished patients when they come for monthly check ups at the health centre. These patients benefit from food-hand-outs provided by GOAL. Furthermore, children we discharge from

> the health centre are referred to the GOAL feeding scheme (Interview 51, 05/12/2011).

At the time of this field work, GOAL was the only remaining NGO operating in Nyamakate community. World Vision and LEAD stopped operating in Nyamakate in 2008 and 2010 respectively (Interview 53, 07/12/2011). Their impacts were minimal since there operated for less than two years each. A stakeholder explained why NGOs operate for very limited periods and then leave:

> You have to realise that different organisations came at different times and some of them went away. All organisations come and go as per the agreed timeline with council and government. Yes, organisations can renew and extend their operations as long as council still wants them or they still have funds to continue their activities in the area (Interview 53, 07/12/2011).

Most of the community respondents blamed the absence of external support on the political situation in the country and the Nyamakate community. An interpretation of the above quotation demonstrates that the state has power over the entry and exit of an NGO in a community. Given that NGOs stand as a threat in developing countries, most governments check on their operations by monitoring the balance of power. The Nyamakate situation demonstrates Bryant and Bailey's (1997) argument that the state possesses the formal monopoly on the means of coercion within their territory. At times, because the NGOs and the state derive legitimacy through development projects, governments in developing countries have protected their political interests at the cost of the weak (Bailey, 1991).

The preceding findings demonstrate the institutional changes that have taken place in the Nyamakate area. The Nyamakate area experienced different levels of benefits and support from the state and HRDC in response to national policy that was informed by the macro-economic and political situation. From 1980 to 1990, the government pursued a semi-populist policy characterised by welfarism, and the Nyamakate community benefited the most from the state during this period. The benefits included infrastructure, natural resources and food hand-outs. During this decade, the livelihoods were better for the social actors since the state cushioned them from the perturbations that confronted them. However, government withdrew their support from 1990 when it pursued a neo-liberal economic policy, until the 2000s which

were a period of political and economic crisis. This means social actors have had to deal with shocks and challenges that confront them with minimal state support.

The government has thus neglected community development by succumbing to neo-liberal policies, and at another more local scale, utilising agricultural inputs for political mileage. With the exception of the Freedom from Hunger Campaign, other NGOs that operated in Nyamakate after 1990 have had very few positive impacts. Furthermore, the aid from NGOs operating in the Nyamakate area has not targeted or benefited everyone. The aid takes the form of relief like food hand-out during times of stress. It has been ad hoc aid, rather than aimed at developing the beneficiaries. From the preceding argument it must be noted that the operations of the NGOs are determined by the state.

The reported findings support the political ecology literature that demonstrates the contradictions of the state as it engages with NGOs in relation to development policy and interventions. Yet both institutions compete for legitimacy and power over communities, and in the process the social actors and natural environment are neglected (Bryant, 1991). The secondary data presented in Chapter Four and the primary data presented in this chapter demonstrate that the history of the Nyamakate community is a process and forms the context in which the actors experience their realities. The political economy of the country and the institutional context therefore provide the structural context in which actors interact with their natural environment and respond to health shocks. It can therefore be proposed that an HIV and AIDS affected household experiences the impacts of HIV and AIDS and water scarcity with minimal institutional support, thus making the affected actor vulnerable to the perturbations.

6.4 Conclusion

Chapter Six presents the history and institutional dynamics within the Nyamakate resettlement context. The history presented here mirrors the epochs in Zimbabwe's post-independence political economy. These periods can be characterised as the good times from

1980-1990, the times of change from 1991 to 1998 and the times of crisis from 1999 to the present. The traditional and civil structures of governance at the local level are presented and clearly bring out the contradictions in power and hegemony at different times in the history of the Nyamakate area. The primary conflicts in the Nyamakate area are the contestations amongst the traditional Chiefs, at one level, and the competition between the traditional structure and Village Development Committees, Ward Development Committees and Councillor for power and legitimacy. These contradictions at the grass roots level are amplified with the involvement of *de jure* institutions such as government representatives and non-governmental organisations. This contestation of power and politics brings about ambiguities in governance.

While the populist policy adopted by the Zimbabwean government was to ensure equal access to natural resources like land, water and capital for investment between blacks and whites, the policy failed to achieve meaningful equality levels. As a result of the government's desire to be supported financially by multi-national institutions like World Bank and the International Monetary Fund, it changed its policy and adopted a neo-liberal policy after 1990. This resulted in the Nyamakate area not getting adequate government assistance except for the running of the clinic at a minimal level. The NGOs that have operated in Nyamakate have not had a significant impact on the people's livelihood (with the exception of Freedom from Hunger Campaign) because their programmes have not been developmental, such as food hand outs and provision of cement to secure water points. This has exposed the Nyamakate community to the shocks of HIV and AIDS and water scarcity and variability without the assistance of government or Non-Governmental Organisations. The experiences of the Nyamakate households of HIV and AIDS and water scarcity and variability are structured by the political economy, socio-cultural beliefs and practices regarding sexuality, health, sickness and water resource. Political ecologists argue that when peasant farmers are left to their own means the environment suffers and degradation of natural resources results (Blaikie and Brookfield, 1987; Biersack, 2006).

Chapter 7: The Impacts of HIV and AIDS on the Households in Nyamakate

7.1 Introduction

Chapter Seven presents the households' experiences and understanding of HIV and AIDS. The lived experiences are interpreted on the assumption that the households are susceptible to HIV and are vulnerable to AIDS and that the social, political and economic systems inform the context. Specifically, the chapter aims to address the first objective which seeks to explore household's experiences, response to, and interpretations of the impacts of HIV and AIDS on the household and community. Section 7.2 presents the household structures and the socio-demographic structure of interviewed households. In this section, findings on household head, age, household occupants, income generating activities, household skills level and income levels is described. Section 7.3 presents the impacts of HIV and AIDS at the community level. Twelve main themes will be presented which were derived from the findings on the impacts of HIV and AIDS on the Nyamakate community. Section 7.4 presents findings on the households' experiences of HIV and AIDS. Section 7.5 describes the financial impacts of HIV and AIDS on the Nyamakate households, while Section 7.6 discusses the coping strategies employed by the Nyamakate households in order to cope with the range of HIV and AIDS impacts. Finally, Section 7.7 presents the conclusion to the chapter.

7.2 Household Structure and Socio-demographic Profile of Nyamakate Households

This section describes the household structure and the socio-demographic profiles of the Nyamakate households within the HIV and AIDS context. In order to understand the household structures in Nyamakate, it is necessary to examine concepts related to household structure. The discourses in the literature related to household structure and household socio-demographic characteristics have been largely informed by Eurocentric ideologies of family and household (Oyewumi, 2002). In the capitalist societies of the North, the concept of the nuclear family has been promoted as the most ideal family structure and societies throughout the world are persuaded to strive to achieve these (Oyewumi, 2002). A nuclear family is

defined as a household composed of a woman and a man and their biological children (Bengtson, 2004).

A number of scholars concur that the nuclear family is limited in rural sub-Saharan Africa as the traditional extended family continues here in one form or the other (Gordon, 1996). The findings related to the socio-demographic data of the 40 interviewed households show that 33% of the interviewed families were nuclear families (Appendix 9). Most of these families were headed by middle aged household heads of between the ages of 31 and 40 years of age. Four of the 40 interviewed households had the household heads migrating to work in towns in order to meet their family needs and only coming to the Nyamakate area at regular intervals – monthly or weekly (Appendix 9). Out of these four only one had someone who was not part of the nuclear family living within the homestead. This agrees with the findings of other studies that working families have higher chances of being nuclear than purely peasant families that are extended (Loewenson, 1986; Gordon, 1996; Oyewumi, 2002). The findings of this study however, show incidences of nuclear families in the Nyamakate area which might not have been expected in rural Zimbabwe. Nuclear families in the Nyamakate area had an average of five people per household. This is higher than the national and provincial average household sizes which are 4.2 and 4.3 respectively (CSO, 2012). The extended family households on average stayed with three people who were not directly biologically linked to the household head.

The study revealed that Nyamakate had both female and male headed households (Figure 7.1-7.3). Twenty-seven out of the forty (68%) interviewed households had males as the household head (Figure 7.1-7.3). The 13 female headed households (32%) were all widows. This observation agrees with gender literature that argues that females become care givers to their sick spouses (Yamano and Jayne, 2004; Mutangadura, 2005). The caring role has been inculcated in culture and traditions to reinforce gender inequality. Then the care giving role is passed to the children, since their spouses pass away earlier than women (Jukes and Morel, 2010). Six of the interviewed households had grandparents as household heads, with one of these being male. The average age of household heads was 53 years and ranged from 31 to 90 years old (Appendix 9). The average age of the interviewed households in the Nyamakate area was 24 years.

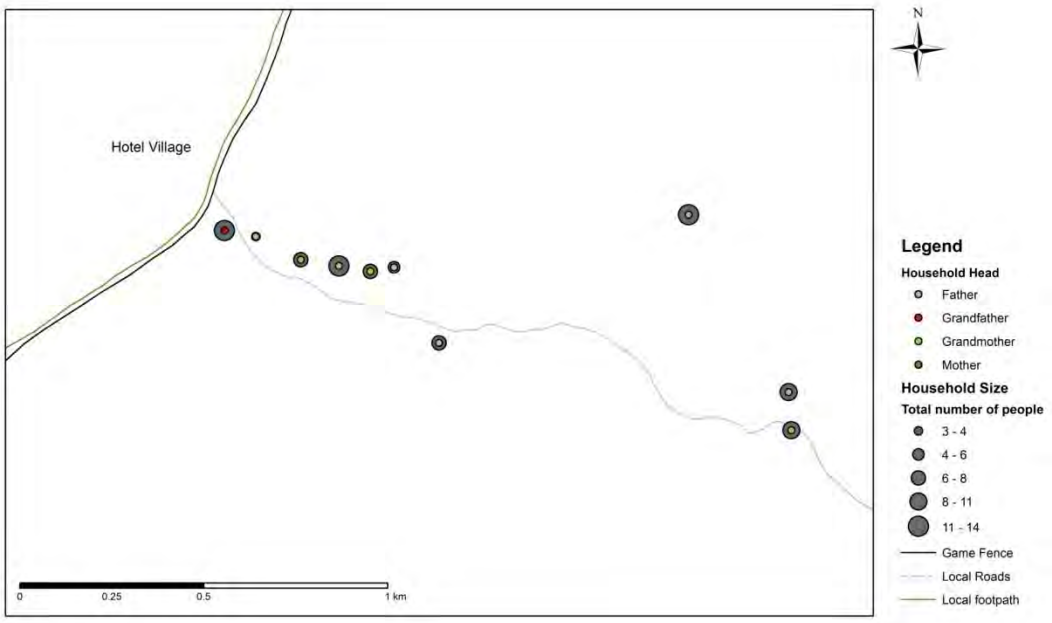


Figure.7.1 Hotel Village household head and size of household.

Out of the 40 sampled households, households in Hotel village have bigger household sizes than those from other villages. Female headed households have a relatively smaller number of people residing within the household (Figure 7.1-7.3). Female headed households in Hotel Village have smaller household size when compared to male headed households (Figure 7.1). Female headed households in Juliet village, with the exception of one, have smaller total number of people residing when male headed (Figure 7.2). In Juliet Village a household headed by a grandmother accommodates the most number of people from the sampled households, and it is a multigenerational household. In villages 25 and 27a, three out of the twenty interviewed households were headed by females (Figure 7.3). In villages 25 and 27a only one household is headed by a grandmother and she stays with her grandchildren (Appendix 9).

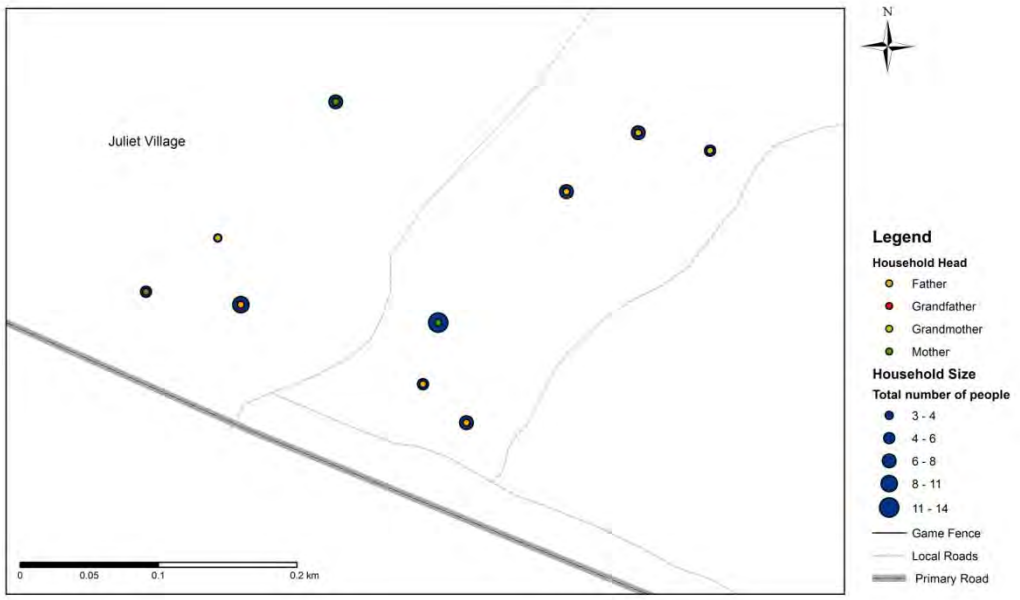


Figure.7.2 Juliet Village household head and size of household.

The level of education in a household is important in achieving a sustainable livelihood. In their access to resources and vulnerability model, Barnett and Blaikie (1992) classified the educational level of a person under the concept of access qualification. They argued that a household needs access to natural resources and agricultural inputs, but more important skills in to allow them to utlise the resources. More recently scholars who utilise the livelihood framework refer to human labour, education and skills level as being part of human capital (Meinzen-Dick and Adato, 2001). The important point to note is that level of education and skills determines the potential efficient utilisation of resources accessed by the household. Ten amongst the 40 (25%) interviewed household heads did not go to school nor do they possess any other vocational skill, while 14 out of the 40 household heads had attended school up to primary level. Eight of the household heads had undergone various vocational training courses, such as arch welding, electrification and building (Appendix 9).

The interviewed households pursued various income generating activities and the findings show diverse levels of income. With the exception of one household, all other households

indicated that they engage in agriculture as an income generating activities. Twenty-one out of the 40 interviewed households (53%) indicated that their only source of income generated by agricultural activity, which enables an income from the sale of crops. While the other 19 households (47%) engage in diverse income earning activities such as formal work, informal trading and part-time contract work. With the exception of six farmers, the remaining 33 households whose income source comes only from agriculture earn less than US$100 per month. The farmers who have the highest household incomes are those who are mainly involved in the production of tobacco, with other edible crops produced at a smaller scale. Of note is study participant 40 who left his electronics career to pursue tobacco agriculture on fulltime bases, and the household now earns US$800 per month.

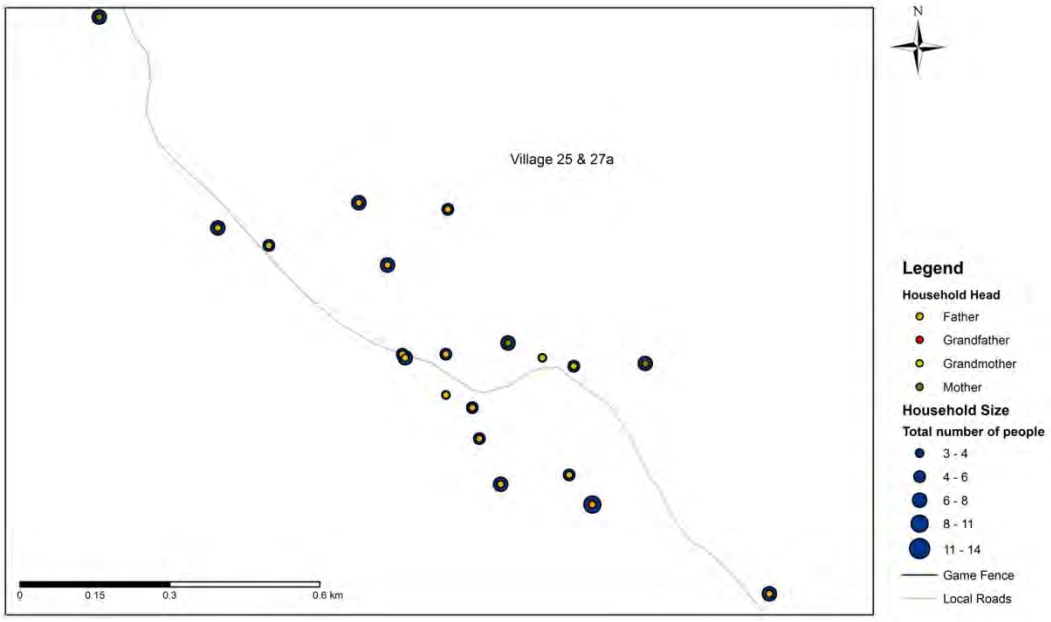


Figure 7.3 Household head and household size for villages 25 and 27a.

The average income of all the interviewed households is US$173 per month. Hence, generally, households that are involved in agriculture alone have lower incomes than their counterparts who are engaging in diverse income earning activities (Appendix 9). This finding confirms Matshe and Young's (2004) analysis that rural households in Zimbabwe which derive their household income mainly from non-farm activities have relatively higher

household incomes than those who do not. The lower incomes of farming dependent households are exacerbated by the poor prices being offered for crops by government-run parastatals, namely, the Grain Marketing Board (GMB) and the Cotton Marketing Board (CMB) (Moyo, 2009).

The second part of this section presents the analysis of the Nyamakate socio-demographic data in the context of HIV and AIDS. Barnett and Blaikie (1992) classify households in relation to HIV and AIDS as follows: HIV and AIDS afflicted, HIV and AIDS affected and unaffected. This classification identifies three possible types of interactions with HIV and AIDS rather than the commonly used binary classification, namely: affected and non-affected. Barnett and Blaikie's (1992) terminology is not used in this study but rather the following terms: affected, indirectly affected and unaffected. A household with an HIV and AIDS sick person within the household or which has suffered the death of a family member from HIV and AIDS will be called an 'affected household'. An 'indirectly affected' household is one where a member or members provides support for an ill patient who was not part of their household. An 'unaffected' household is one which has not experienced the impacts of HIV and AIDS in any way. The question of how to identify HIV and AIDS affected is dealt with in Chapter Five of this thesis.

The study recruited 40 households, of which 13 were affected by HIV/ AIDS (33%). Out of the 13 households affected by HIV and AIDS, seven had members on antiretroviral drugs (ARVs), six had terminally sick people and two had experienced a recent death due to HIV and AIDS (Table 7.1). Out of the 13 affected households three of the interviewed households were nuclear families (Table 7.1). Within these three households, two of the households were caring for ill household heads, and in the third, the household was caring for their son (households 22, 40 and 16, respectively).

The HIV and AIDS affected households displayed higher incidences of being extended families and staying with members of the extended family. This pattern is not prevalent in the indirectly affected and unaffected households (see tables 7.1; 7.2; 7.3). Three out of thirteen (23%) affected households were nuclear families (Table 7.1). While out of the 27 indirectly

and unaffected households, 48% were nuclear families (Table 7.2 and 7.3). Common among extended families were those with a number of children below the age of 18 years, most of whom are orphaned. For example, household 38 has 11 children under the age of 18 years. The minimum and maximum ages for the extended families were one and 90 years respectively (Table 7.1-7.3). Literature has shown an increase of multigenerational households due to the high mortality amongst the middle age group as a result of HIV and AIDS (Bengtson, 2004; Hosegood, *et al.,* 2007). AIDS has modified the household structure and there is a prevalence of female headed households due to women being widowed (Ntozi and Zirimenya, 1999). This impacts negatively on the household since the mother has to assume both the roles of fending for the household and reproductive roles. Amongst the 13 HIV and AIDS affected households, four were female headed households, namely, households 1, 16, 17 and 32 (Table 7.1).

Table 7.1 Household structure of HIV and AIDS Affected Households.

		Study Household ID Number													
		1	2	3	8	9	16	17	21	22	24	27	31	32	40
Household members and their age	Grandfather										75				
	Grandmother		70				59				67				77
	Father		32	54	55	69			78	54		33	75		51
	Mother	51	28	42	39	60		53	56	51		27	63	52	45
	Son	25	2	12	14	21		17	23	16		10		22	25
	Daughter		12	3				19	31	8	42	2	35		
	Son			4	7				20			8		19	21
	Daughter							24	12		32				
	Son								17						
	Grandson	5					11	4	12		13		5	5	2
	Granddaughter						5	2	2	8	1		9		
	Grandson	2					11		9		12		2	3	
	Household head's brother/sister	33	25						81						
	Sister's daughter		5					23				16			
	Daughter-in-law	30													
	Brother's Son	3						27			11	16			
	Brother's Son											8			
	Granddaughter						2								
	Granddaughter						14								
	Grandson										8				
	Grandson								5		5				
	Grandson										10				
	Grandson										3				
	Total per household	**7**	**7**	**5**	**4**	**3**	**6**	**8**	**12**	**5**	**12**	**8**	**6**	**5**	**6**

Traditionally, the African family has a hierarchy of relationships and there are roles ascribed to each generation level. According to Ntozi and Zirimenya (1999), the function of

grandparents is to help in the upbringing of the children and guiding the household head (father). South African studies show shifts in the function of grandparents in the era of HIV and AIDS as they increasingly have to take up a care giving role, while using their resources from pensions and old age grants (Hosegood, *et al.,* 2007; Schatz, 2007; Schatz and Ogunmefun, 2007). Evidence from this study reveals the existence of more old people (31%) in HIV and AIDS affected households than the indirectly and unaffected households (Table 7.2). One case is that of the grandmother in household 40 who came to the household to help in care giving since both the father and the mother of the household are ill and taking antiretroviral drugs[53] (Interview 40, 14/11/2013). Amongst the HIV and AIDS affected households, household 24 had the highest number of people (10 people) dependent on a grandmother and grandfather, the latter acting as the household head (Table 7.2). Old people in Zimbabwe do not receive pensions unlike their counterparts in the South African context.

Table 7.2 Socio-demographic data for indirectly affected households

	Study Household Id						
	4	20	29	30	34	37	39
Grandfather							
Grandmother							
Father	54	40	40	65	53	31	33
Mother	42	30	37	48	42	23	26
Mother			28				
Son	12	13	15	22	18	1	10
Daughter	3		9				8
Son	4	9	13	9	9		6
Son		5	5				1
Daughter		2					
Son			2				
Daughter-in-law				19			
Daughter-in-law				18			
Granddaughter				13	5		
Granddaughter					3		
Total per household	5	6	8	7	6	3	6

In contrast to the HIV and AIDS affected households, the indirectly affected households show a different socio-demographic structure. The largest indirectly affected household has seven members unlike the affected households whose largest household had 12 members (Tables 7.1 and 7.2). Indirectly affected households did not have grandparents as part of their

[53] At the time of the study the husband could do his usual chores and manage his tobacco production activities but the wife was ill and could only do limited chores. The household is exceptional in that it has two workers who help with heavy manual labour.

household members (Table 7.2). This could be because people came to be resettled in the Nyamakate area as nuclear families. All the seven households were male headed households. Household 37 from Juliet Village was the smallest household with three members (Table 7.2). The indirectly affected households were mainly nuclear families except for two that had some extended families (Table 7.2). Amongst the seven indirectly affected households, six were in their middle ages (the age range of the household heads was 33-55). With the exception of household 30 and 34, the five households are two-generational households. Ntozi and Zirimenya (1999) noted that, within the HIV and AIDS era three generational households will become the norm. These findings do not conflict with Ntozi and Zirimenya's (1999) observations since the parents sampled in the Nyamakate study were in their middle ages and some recently married. The age range of household heads was 33 and 65 years (Table 7.3). Out of the seven households one head of household has a polygamous marriage with two wives (Household 29) (Table 7.2).

The study recruited 20 unaffected households and they demonstrate a different household structure from the affected and indirectly affected. Six out of the 20 unaffected households were female headed households (Table 7. 3). The unaffected households were mainly nuclear families. The nuclear family had parents and their biological children. Household 38 from Juliet village had an uncommon family structure dominated by grandchildren (Table 7.3). It was revealed that the household head's children gave her their children to bring up as they were living in urban areas. She said, "My children who stay in towns send their children because they are lodging very small houses like one room … their wives periodically visit their children" (Interview 38, 12/11/2011). Unlike the affected households, most of the unaffected and indirectly affected have household heads that are in the middle ages (25-54 years). Furthermore, there are few three generational households among the indirectly and unaffected households (52% of 27 households). While most (85% of 13) of the HIV and AIDS affected households were three generational. The family structure of HIV and AIDS affected households could influence the quality of care for HIV and AIDS patients. The orphans who are being cared for by their grandparents confirm findings from other studies that demonstrate that this is one of the important impacts of the pandemic (Hosegood, *et al.,* 2007; Schatz and Ogunmefun, 2007; Robertson, *et al.,* 2010).

Table 7.3 Socio-economic data for HIV unaffected households.

		Study Household Id																			
Study Id		5	6	7	10	11	12	13	14	15	18	19	23	25	26	28	30	33	35	36	38
Household members and their age	Grandfather																				
	Grandmother												74	90	66					51	
	Father	33	38	78	42		32	37	41	63	57	64		71		37	65		40	28	
	Mother	26	36	62	38	57	25	33	36	48	54	58		51		35	48	66	34	25	68
																31					
	Son	7	17		21	35	9	12	8	11	32			24		14	22	19	19		34
	Daughter	4		21	7	18	4	2	15	16		21		16		10			15	1	
	Son	1			5	27		8	6	6	21			18		6	9	12	16		
	Daughter			20		15			11	13				8					14		
	Son								2					5		1		11			
	Daughter			10		11															
	Son															1		5			
	Grandson														2			4			11
	Grandson									2		08	2		6	3					15
	Grandson														6						2
	Siblings of household head												69						38	15	
	Brother's daughter																			4	
	Granddaughter				1								17		24	4	13				18
	Daughter-in-law				18	20											19				33
	Daughter-in-law																18				
	Granddaughter														11						9
	Granddaughter																				8
	Granddaughter																				7
	Granddaughter																				6
	Granddaughter																				12
	Granddaughter																				14

Post-structuralist political ecologists argue that the analyses of social systems should not be at the household level only but also must investigate the diversities and power relations within the household (King, 2012). Such intra-household analysis seeks to expose the diversity of rural people's experiences with HIV and AIDS (King, 2012). In order to be able to do this, it is necessary to understand the household structure, hence the analysis of HIV and AIDS in this study will commence by interrogating the household structures of the sampled households in relation to HIV and AIDS. I have selected four household structures in order to understand the differences between the three modelled household typologies which are: affected, indirectly affected and unaffected (Figures 7.2-7.4). Two HIV and AIDS households have been selected because they typify interviewed affected households.

The first household typology discussed here is that of the *HIV and AIDS affected household* (Figure 7.4-7.5). Table 7.1 presents the global characteristics of the HIV and AIDS affected households but the case will present more detail at the micro level. In the first case, household 17 has two members of the household who are terminally ill and on ARVs (Figure 7.4). The household head stated that her brother's son and her sister's daughter were aged 27 and 23 respectively (Table 7.4). These people had joined the household because their parents had died (Figure 7.4). The deceased parents were siblings to the female household head, hence she took them into her household and is caring for them.

The extended family through this process experiences an increase in dependents. Furthermore, the two daughters of the household head have their own children who stay within the household. Both of these grandchildren are not being supported by their fathers (Interview 17, 28/09/2011), hence they also depend on the household head. Agriculture is their main source of income and food (Appendix 9). The household has a compromised labour force and relies on rain-fed agriculture, which makes the household vulnerable to rainfall variability. Furthermore, this household receives food hand-outs from the local clinic (Interview 17, 28/09/2011).

The second case is of an *HIV and AIDS affected household*-household 16 from village 27a. Unlike the first case, the second case experienced a recent HIV and AIDS related death

within the household (Figure 7.5). A daughter of the household head died,leaving two orphaned children.

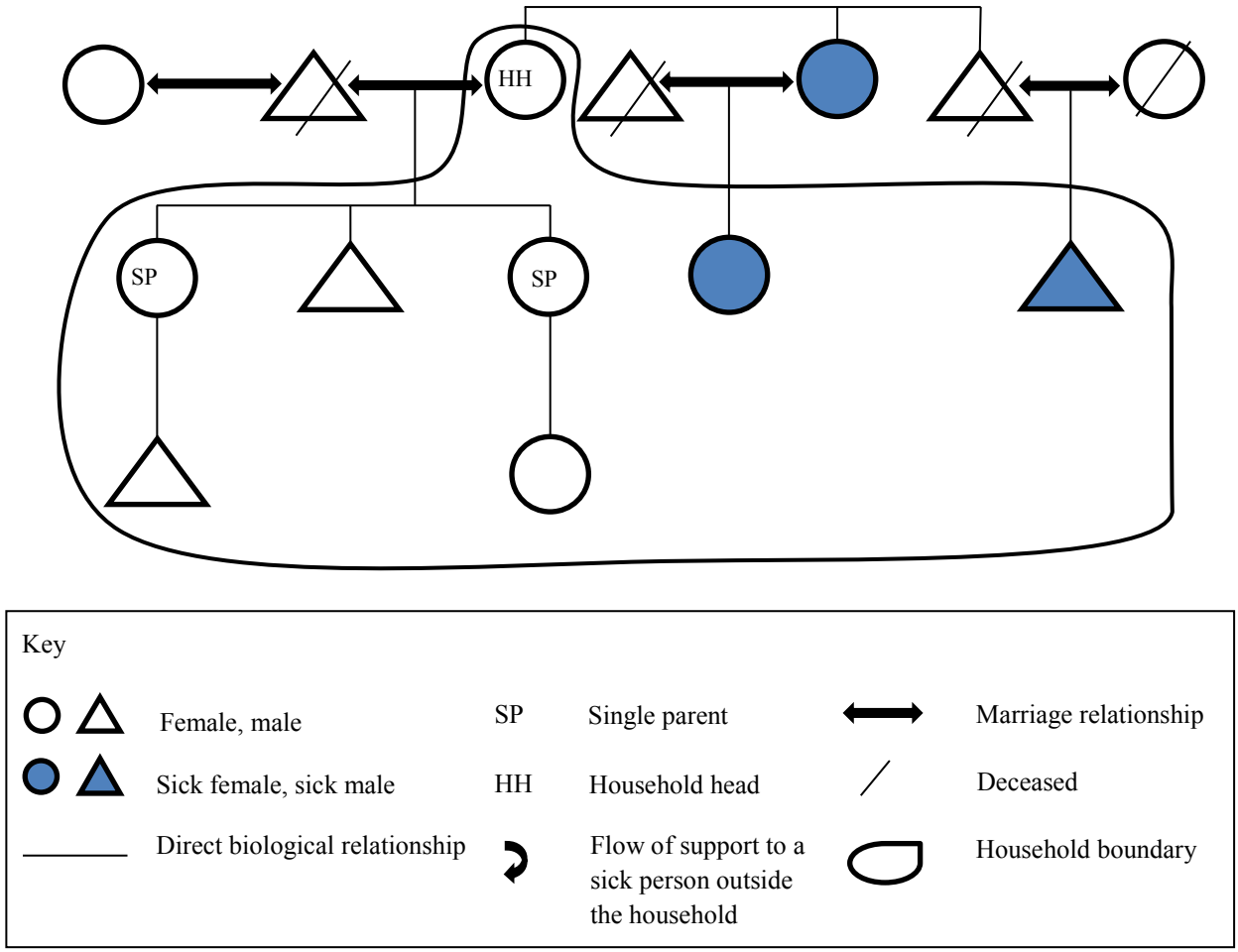
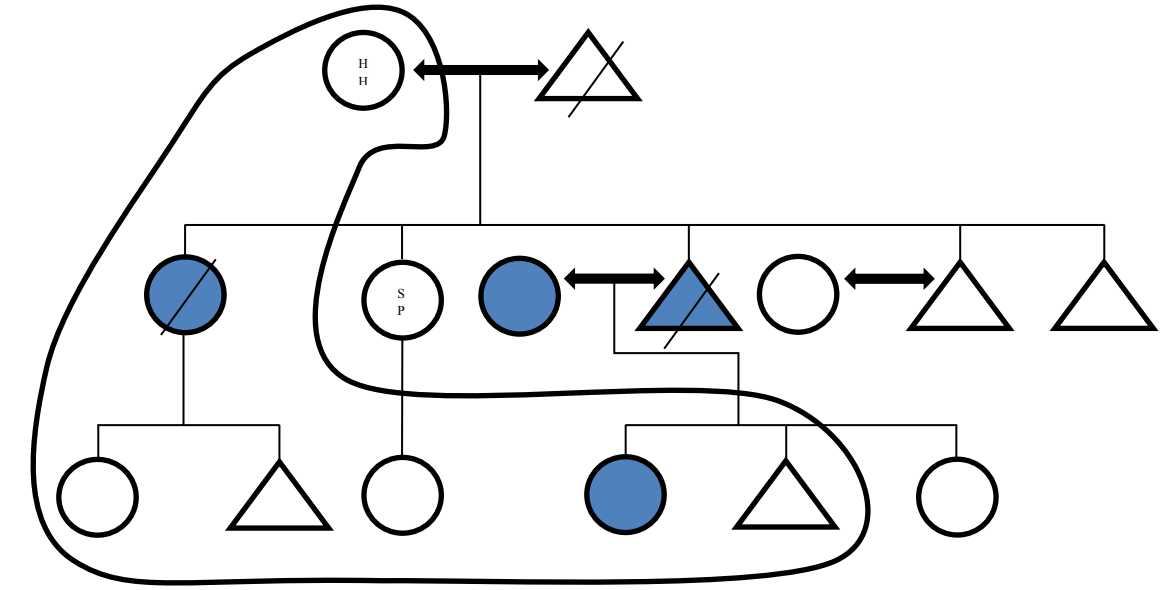


Figure 7.4 The structure of Household number 17 (Adapted from Hosegood, *et al.,* 2007: 1253).

The old grandmother who is 59 years and has never been to school said, “The mother of these two only told me their totems but I do not know their fathers … yes they are from different fathers. Worse, their fathers never paid even a cent or bought me groceries” (Interview 16, 28/09/2011). The household head is also caring for her granddaughter, the daughter and son of one of her sons (deceased). This granddaughter who is two years old is suffering from HIV and AIDS. She said, “She has never suckled breast milk from birth, but I think the tablets are helping her” (Interview 16, 28/09/2011). Although the mother is alive she is very sick and being cared for by her own family. This household is unique in that it is only composed of a grandmother and her grandchildren.



Key

Female, male		SP	Single parent		Marriage relationship
Sick female, sick male		HH	Household head		Deceased
Direct biological relationship			Flow of support to a sick person outside the household		Household boundary

Figure 7.5 The structure of household number 16 (Adapted from: Hosegood, *et al.,* 2007: 1253)

The third case presents a typical *indirectly affected household*, that of a nuclear family (Figure 7.6). The household structure of household 34 was selected as it demonstrates characteristics of most indirectly affected households. Household 34 is headed by a 53 year-old man who is in a monogamous marriage, living with their two sons and their two granddaughters. The wife's brother is HIV and AIDS infected and the household provides support for him in numerous ways: money, care giving and other material requirements (Interview 34, 28/10/2011). In this case HIV and AIDS do not have a direct impact on the household structure but on the household's resources.

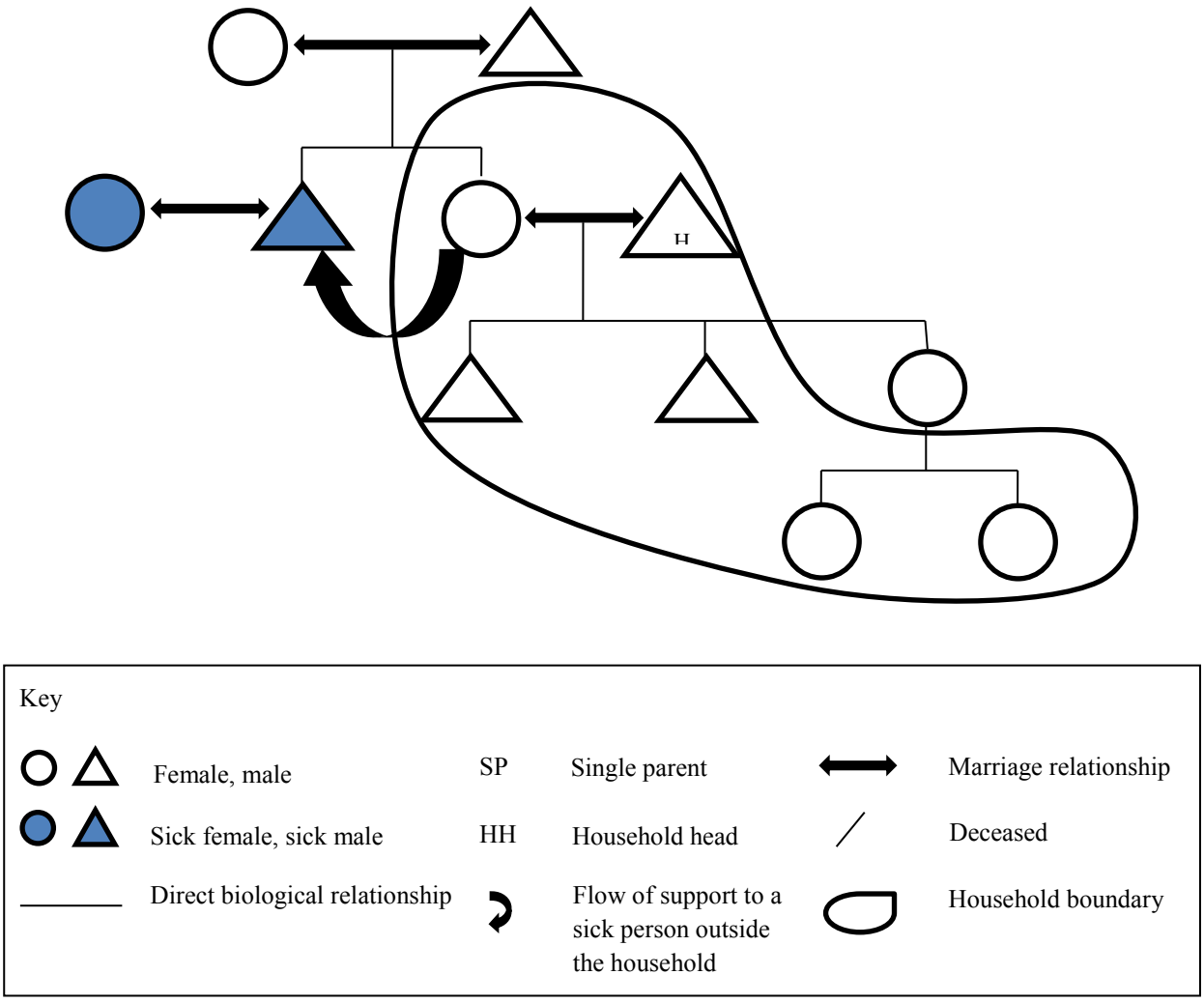


Figure 7.6 The structure of household number 34 (Adapted from Hosegood, *et al.,* 2007: 1253).

The fourth household typology is the *HIV and AIDS unaffected household* (Figure 7.7). Household 38 has been chosen because it is female headed and it is a three generational household. Most unaffected household have two generations. The household head is a widow aged 68 years and the household has 14 members (Table 7.4). Household 38 does not have anyone suffering from HIV and AIDS nor is help being rendered to anyone suffering from HIV and AIDS. The household head likes to stay with her grandchildren this is why the household has the ten grandchildren (Interview 38, 12/11/2011). Staying with grandchildren is a form of insurance in the Shona culture, since the parents will send them food, money and other resources and the grandparent benefits in the process (Interview 38, 12/11/2011). In an interview the household head indicated that staying with her grandchildren would ensure that the parents remit food and gifts to her when they buy for their children. Furthermore, she will

get frequent visits from her children and their spouses, as they also want to spend time with their children (Interview 38, 12/11/2011). Hence, in unaffected households (such as household 38) living with other relatives is usually deliberate while for the affected households (such as household 17) it is forced on a household by the situation.

The interviewed households demonstrate much diversity in the value of remittances they obtain from outside the household. Literature on household income from remittance reports that remittances from social networks play a significant role in the livelihoods of HIV and AIDS affected households in Sub-Saharan Africa (Barnett and Blaikie, 1992; Drimie and Gandure, 2005; Hunter, 2007). However, Ansell (2009) notes that case studies from southern Africa are demonstrating that in some cases social networks are no longer effective because they have been overstretched. Out of the 40 interviewed households in this study, half (50%) had at least one family member staying outside the household and visiting the household at least once per year. Sixteen out of these 20 households received help from those people who were visiting but are not permanent residents of the household. Of these 16 households, most (94%) households, with the exception of one household (in the household that receives support from a grandson), received help from their children who were working in urban areas. The help was mainly in the form of money and groceries for the household. The support is erratic since it is dependent on home visits or, in response to specific needs. All the households who received help appreciated it, as illustrated by the two responses below.

> It is lucky to have someone give you food even if it is your child … some get married and start their lives with their families and the wife might not want to give the husband's parents anything. It is happening here in our village but God blessed us. My children give me food and money (Interview 24, 15/10/2011).

> My children who are working in town help us very much. We are old and no longer productive because we cannot work like before plus there is no rainfall (Interview 31, 23/10/2011).

This evidence reveals that households that reported having children who reside in urban areas had higher incidences of receiving help. The support was greatly appreciated especially in the Zimbabwean context where the economy has collapsed to the extent that even someone working their salary cannot afford a descent lifestyle (Clemens and Moss, 2005).

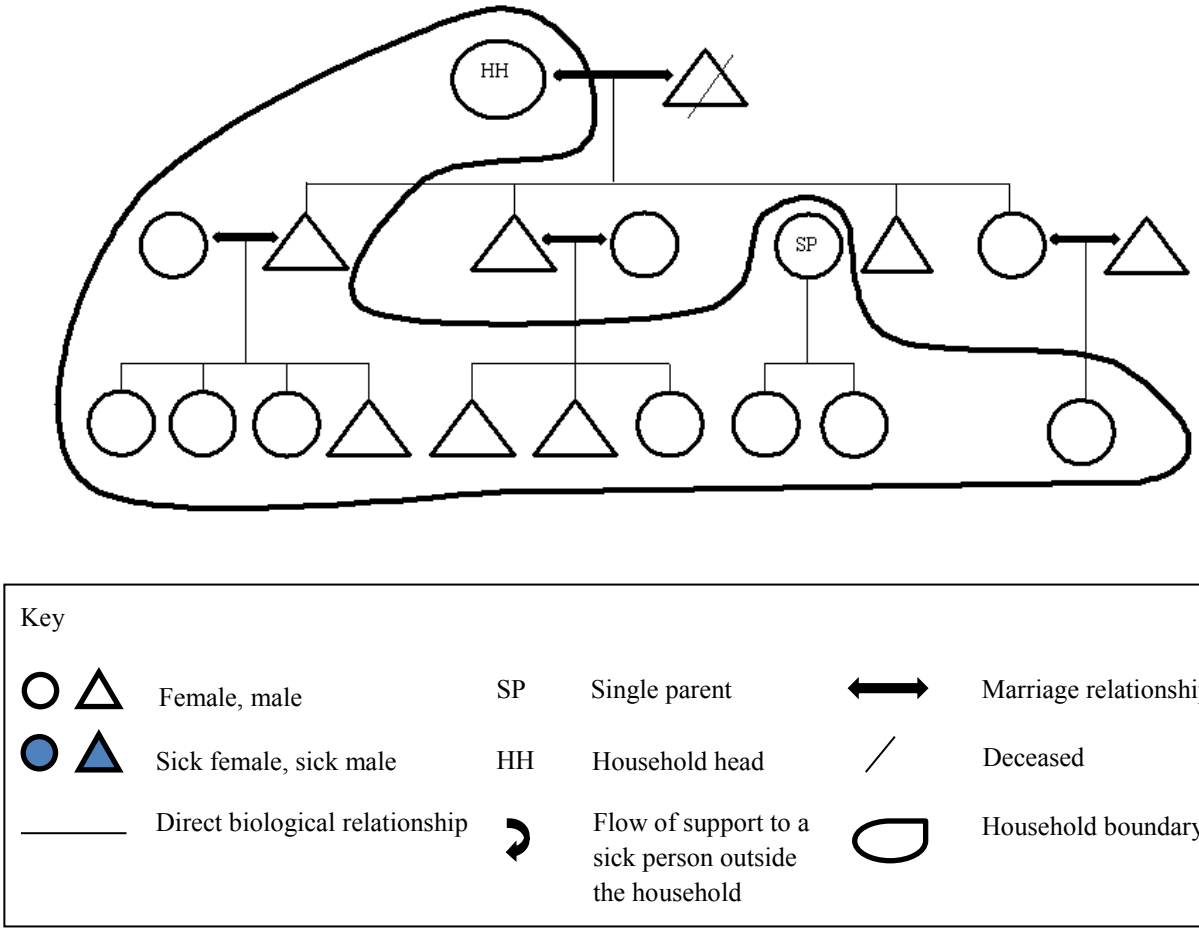


Figure 7.7 The structure of household number 38 (Adapted from: Hosegood, *et al.,* 2007: 1253)

Six out of the 20 unaffected households interviewed received help from people who were outside the household. On the other hand, 10 out of the 13 HIV and AIDS affected households acknowledged receiving help from people outside their households. These households borrowed small items or tools from friendly neighbours such as salt, sugar, hoes, wheel barrows and scotch carts. This borrowing was made possible due to the existence of social networks.

Four out of 20 households that had a family member residing in another area did not receive any help. The interviewed household heads showed disappointment about children who did not help their families (Household interview 2, 7, 26 and 32). The following responses demonstrate the disappointment of parents about children who do not help them.

> No one helps us. Our children are useless they do not even support us (Interview 22, 14/10/2011).
>
> … There is no one who assists us with anything money or groceries. [What about your children?] Ha ha ha ha (laughing), yes, we can only say we gave birth to them but they are not people who remember and value where they came from (Interview 7, 19/09/2011).

Section 7.2 presented the household structures of the interviewed households. The Nyamakate household structures, income levels and income generating activities demonstrate the influence of social, political and economic conditions prevailing in the Nyamakate area and the country. For example, it shows how the liberal policies adopted in the early 1990 forced the traditional extended family structures to become nuclear families by promoting competition and market oriented development policies (Bhalla, *et al.,* 1999; Mawowa, 2008). However, the findings from the interviewed households from Nyamakate show that extended families characterised by multiple generational household members still exist alongside nuclear families. The findings of this study allow for the household structure of the three household types within an HIV and AIDS context, namely: affected, indirectly affected and unaffected households to be differentiated. The HIV and AIDS affected households are composed of three generations and are mostly extended families. A number of them are headed by grandparents with grandchildren living within the same household. While on the other hand, indirectly affected and unaffected households are smaller and mostly structured as nuclear families. This detailed understanding of the household structures in the Nyamakate area creates a platform for a detailed analysis of intra-household impacts of HIV and AIDS on household members.

7.3 Impacts of HIV and AIDS on the Nyamakate Community

This section presents the data on the impacts of HIV and AIDS on the Nyamakate community. The impacts of HIV and AIDS on society has been dominantly analysed within the quantitative paradigm with scholars aiming to quantify the magnitude of the shock (Goudge, *et al.,* 2007; Lapinski, *et al.,* 2009). Chapter Two has demonstrated that studies on

the impacts of HIV and AIDS have predominantly been undertaken in the disciplines of economics, demography and public health. However, scholars are increasingly conceptualising health issues using a political ecology framework which provides for a more holistic understanding (King, 2010; King, 2012). This is unlike economic studies that limit the impacts of HIV and AIDS to key economic indicators such as Gross Domestic Product (GDP), and other economists who focus on the household economy instead of the national economy (Barnett and Clement, 2005). This study interrogates the impacts of HIV and AIDS at the household level using qualitative methodology in order to explore the diversity of peoples' experiences.

The negative impacts of HIV and AIDS on the household emerged as the 'master theme' within all the 40 households interviewed, each highlighting at least one problem associated with HIV and AIDS (Table 7.4). Participants in the eight focus group interviews (FGI) also raised numerous issues associated with problems resulting from the HIV and AIDS pandemic (Table 7.4). These themes and the number of responses across both types of interviews are indicated in Table 7.4 below.

The participants identified and discussed 12 themes they considered to be the important impacts of HIV and AIDS on the Nyamakate community. These were identified based on the number of responses from interviews. More than half of the interviewed household heads and focus group interview participants identified high levels of mortality as the most severe impact of HIV and AIDS (Table 7.4). Orphans and vulnerable children, and the increase of sick people in the area, were ranked second and third important impact of HIV and AIDS. Care giving and ARV problems emerged as themes from the household interviews and not in FGIs. Prostitution was raised as sixth theme and it was raised in five household interviews and one FGI. HIV and AIDS was said to be interrupting community projects through loss of productive power and a full labour force. Household respondents further discussed how HIV and AIDS had affected cultural rituals, family growth, and how it exacerbated the spread of opportunistic infections (Table 7.4).

Table 7.4 Themes related to the impact of HIV and AIDS on the Nyamakate Community.

Theme	*Issue*	*Number of responses from household interviews (n = 40)*	*Number of responses from focus group participants (n = 8)*	*Total number of responses (n= 79)*	*% of responses per theme*
1	High levels of death	22	5	27	34
2	Orphans and vulnerable children	10	4	14	18
3	Increase in the incidence of sick people	7	1	8	10
4	Caregiving problems	6		6	8
5	Anti-Retro Viral drugs (prolong life but the people do not help much in community projects because they are weak)	6		6	8
6	Prostitution	5	1	6	8
7	The interruption of community projects	4		4	5
8	Changes to customary practices	2		2	3
9	The negative effect on family growth	2		2	3
10	The spreading of opportunistic infections and diseases like diarrhoea	1		1	1
11	HIV related illness being confused with witchcraft	2		2	3
12	Community having more aged than young people		1	1	1
	Total number of responses	67	12	79	(102[54])

The first theme about the impacts of HIV and AIDS on the Nyamakate community is the increase in deaths and associated problems. Literature reviewed in Chapter Two demonstrates the differences in theorising the impact of the death of a family member from AIDS (Oni, *et al.,* 2002; Drimie, 2003; Meher, 2007)[55]. Some scholars argue that the greatest impact of HIV and AIDS on the household is during the critical illness stage (Oni, *et al.,* 2002; Drimie, 2003; De Waal, *et al.,* 2005). On the other hand, scholarship exists that argues that the greatest impact of HIV and AIDS is from the funeral onwards (Masanjala 2005; Meher, 2007). The findings of this study support the second view point, since the theme of death was identified as the greatest impact to the household with the most number of responses (Table 7.4). Respondents reported that the impact was more severe if the deceased was a male rather

[54] The total is above 100% because of the rounding off to the nearest tenth

[55] See ChapterTwo2 Section 2.4 for a detailed discussion of research that theorises the impacts of death to a household.

than a female bread winner. These findings agree with the gendered perspective on the impacts of AIDS in the household; the impacts are higher for morbidity and mortality of a man since income is lost rendering the household vulnerable (Gillespie and Kadyala, 2005; Higgins *et al.,* 2010; Connell, 2012). Most of the participants who indicated death as impacting on the Nyamakate community stated that HIV and AIDS affects young people more than any other age category. The following quotations from interviews demonstrate the community's experiences and interpretations of death:

> We actually had problems to gather the number of men that you had requested…, it is because the village has no adult males due to the high death rate (FGI 24/11/2011).

> Especially ... the young men are dying. As a parent you have expectations when you bring up your child, for example I would wish for them to work and look after me by providing groceries and money, but these people are the ones being affected by AIDS (Interview 24, 15/10/2011).

> The problem is that in some families the parents have lost all their children… (Interview 10, 22/09/2011).

> In this village we have two homesteads that were closed. In both cases the husbands died first followed by the wives and no one stays at these homesteads anymore. The wives looked after their husbands when they were sick and in turn the children looked after their mothers until they died. The children left the homesteads and went into urban areas or to stay with other relatives (Interview 7, 19/09/2011).

Loss of tacit knowledge and skills due to the death of skilled person from HIV and AIDS emerged as a sub-theme of the death theme. In rural African settings, productivity has been negatively affected by HIV and AIDS through diverting labour to care giving, and this loss of tacit knowledge with death is reported in the literature (De Waal, *et al.,* 2005; Gill, 2010). A middle aged professional builder from Juliet Village noted that, due to HIV and AIDS related deaths, the Nyamakate area was losing a lot of experienced labour (Interview 35, 29/10/2011). He narrated his experience of skilled and semi-skilled labour losses in relation to one of the projects in which he was involved.

> AIDS kills a lot of people who have certain skills that can benefit the community. .. For example builders, there are some people whom I used to work with when we got a building contract at the school, who are now dead. If in the future need arises for a similar contract these people are dead and they went with their skills (Interview 35, 29/10/2011).

A number of participants alluded to the death of young children as a problem. Although this was lamented, there is no evidence to suggest that the community interpreted this as a major disruption of community activities. However, one of the respondents stated that HIV and AIDS had increased the frequency of deaths which meant there was 'funeral after funeral' (Interview 25, 16/10/2011), which did disturb the productive processes in the community. People in the area have changed their customary practices at funerals. The researcher observed that community members attend funerals on the day of burial which was not the case before. Furthermore, the length of funerals has been reduced in order to allow time for productive activities such as farming.

The second theme is the increase in orphans and vulnerable children[56]. About half of the study participants who identified death as a problem associated with AIDS, linked death to the increase of orphans and vulnerable children. In rural Zimbabwe, studies reported the increasing number of orphans and vulnerable children due to HIV and AIDS related morbidity and mortality (Francis-Chizororo, 2008; Nyamukapa, *et al.,* 2008). Although donor agents attempt to assist orphans and vulnerable children, the children are largely without institutional support from either government or NGOs (Wood, *et al.* 2006). In an FGI with men from Charlie Village, it was confirmed that most of the orphans in the Nyamakate area were a result of parents dying from AIDS (FGI 4, 01/12/2011). In extreme cases, one household can have orphans from numerous family members who become part of an extended family (FGI 8, 09/12/2011). The following quotation presents how HIV and AIDS caused havoc by creating orphans within one family:

[56] Orphan and vulnerable children are defined as only those children with increased vulnerabilities because of HIV and AIDS http://www.pepfar.gov/documents/organisation/83298.pdf [Accessed on 27/06/2013]. This also includes those whose parents are alive but, because of HIV and AIDS, the child is at high risk, lacking care and protection. This definition was adopted by this study.

> The disease has left a lot of orphans. I have my brother's family which has been destroyed by HIV and AIDS. His son died and left two orphans. The other left one orphan. The other son left three orphans. With the first two cases both parents died. The mother of the three children is still alive and is on the anti-retroviral programme (Interview 22, 14/10/2011).

The above quotation confirms the point that household structures are being distorted by HIV and AIDS. What happens to the children left by deceased parents varies within households depending on the socio-economic status of and social networks within the household. One of the participants (Interview 39, 12/11/2011) reported that when his uncle died from AIDS he left a large inheritance for his children, which included two shops, a bottle store and a grinding mill. The children attended school using their father's funeral benefits (monthly pay-outs to the family by the latter employer) to pay for their schooling and other needs. It was also reported that the eldest son of the participant's uncle recently started a small business using part of his father's estate as capital. This story reveals the existence of a relatively well-off household but this is not the typical case amongst the Nyamakate households since most of the households are poor.

The hardships and sufferings of the orphans and vulnerable children is one of the sub-themes that emerged from the data. Literature from rural Southern Africa suggests that orphaned children are increasingly being cared for by their grandparents (Hosegood, *et al.,* 2007; Schatz and Ogunmefun, 2007). This is confirmed in this study where the evidence shows that orphaned children in Nyamakate area are predominantly left in the care of grandparents. Evidence from FGIs suggests that most children either stay with their grandparents or in child-headed households. This was confirmed in four FGIs where participants said grandparents are the first line of caregiving to orphans, and in most cases there is no other option. If the grandparents are not alive, the orphans live on their own and are seldom checked on by an adult kinsmen or neighbours. The following quotation demonstrates the role of grandparents in caring for orphans and the challenges they encounter:

> We [the grandparents] would have to look after the children who are orphaned by our children. It is difficult for us to take proper care of the orphans because of the lack of

> the required resources within the household [food, money etc.]. We notice that mostly the children brought up by their grandparent will also grow up suffering. [One middle aged women interrupts the granny talking and says] The situation is dire since the orphaned children will contract diseases such as kwashiorkor, cholera because of food shortage, while on the other hand the grannies will suffer from high blood pressure [increased episodes of high blood pressure due to frustration and anger as they fail to cope], which will result in early death. … the granny has already played her role of child up-bringing when she was still young and caring for her [biological] children. Now she is old and having to take care of her grandchildren is difficult. The grannies here [in the Nyamakate area] bring up these children without much attention for example, they can just serve cold food, not monitor whether children have bathed or not, and allow children to do what they want. These things would not happen if the parents were taking care of the children (FGI 2, 24/11/2011).

In the absence of grandparents assuming responsibility of the orphaned children, the household will be headed by one of the older children who will assume responsibility for the household (FGI 7, 08/12/2011). According to one FGI conducted in Charlie Village, everyone is concerned about the welfare of their own households hence they do not help the child-headed households (FGI 4, 01/12/2011) which are left to fend for themselves. This also creates problems for the household and community as alluded to by FGI participants in the quotation below.

> At times children looking after other siblings are a problem because that is when some [children] will get married before age of maturity [18 years of age]. This will be in a desperate attempt to look for refuge. So at the end of the day the HIV and AIDS will circulate amongst us. The elder sister left within the household will resort to any means possible to look after her other siblings even if it means prostitution, which puts her at the risk of contracting HIV and passing it around (FGI 2, 24/11/2011).

On the other hand, although it is usually grandparents who assume the caring role of orphans, isolated cases of relatives caring for orphans do exist in the Nyamakate community. One of the interviewed households takes care of three orphans. The situation depicted in the case of

household 27 from Hotel Village is typical of a household where the relatives are caring for orphans and vulnerable children.

> My husband is one of the few left in his family as most of them have passed away. At a family meeting they agreed to share the orphaned children amongst the three remaining brothers at that time. We took in two children as part of our household. … The girl is my husband's sister [sister-in-law's] child, and the boy is my husband's brother [brother-in-law's] child. Since the death of their parents they have been staying in Karoi with my husband's elder brother, unfortunately he also died last year. The widow asked my husband to come and take the two children as she could not support them. The girl and boy are not going to school as we speak. It is our state of poverty that prevents us from enrolling them into the local school (Interview 27, 17/10/2011).

The important issues in this case are as follows: the sad reality that orphans and vulnerable children will live in more than one household when they are still young, parent's siblings become the safety net for the orphans and vulnerable children and schooling is sacrificed first in order to cope. Furthermore, the family shares an extensive network of relatives that are willing to assist. As alluded to in FGI 4 (14/09/2011), households are becoming more individualistic and focus on bringing up their nuclear family only. Literature on gender demonstrates that the lack of family or social networks to care for orphans often force young girls to engage in transactional sex for money and food (Gilliespie, 2005; Mangoma, *et al.,* 2008; Reed and Shanon, 2009). This makes them susceptible to contracting HIVwhich leads to morbidity and mortality.

The third theme raised is the increase in the incidence of morbidity (Table 7.4). Concern has been raised by participants about the manner in which HIV and AIDS is increasingly the number of people who are sick and bedridden. It has been argued that lack of access to health facilities, poverty and morbidity form a vicious circle which is difficult to escape, especially in the case of HIV and AIDS (Meher, 2007). This situation is worsened by the current liberal economic policies and globalisation that has seen health services and development projects being left to a complex partnership of the private sector, NGOs and government with diverging interests (Meher, 2007; Biehl, 2011). Furthermore, in Zimbabwe, due to the

political and economic crises, health services at the local level are decreasing (Makochekanwa, 2009; MoHCW, 2010).

Participants indicated that HIV and AIDS patients are sick for a very long time before they finally die (Interviews: 1; 2; 11; 13; 18; 34 and 36). The participants shunned away from discussing the issue of the duration of illness. Participants were more comfortable discussing the issues related to the increase of sick people. A number of sub-themes were raised as possible explanations for the increase in the sick people: sexual networks; neglect of the traditional practice of courtship and marriage arrangements the migration of workers from urban to rural areas when falls sick and infant sickness. These four sub-themes will be discussed here in detail.

The discussions with participants in relation to sexual networks revealed their understanding that HIV and AIDS is caused by the sexual transmission of HIV. Participants also understood that this causes high HIV and AIDS prevalence, and this then results in high morbidity rates being experienced in the Nyamakate area. In the event that one of the actors in the sex chain or network contracts HIV, all the other actors are equally affected. All the sexual actors in the sex chain become vulnerable to illness sooner or later. One middle aged women who participated in an FGI in India Village explained the trajectory of a typical sex network or chain in the Nyamakate area:

> People in the Nyamakate area are involved in circular sex networks. Very few or no people ever go out of Nyamakate for sex or marriage partners. …. People in the area know that this woman was sleeping with *nanga* [X], but after they separate someone else takes over and it continues like that. Men also take widows as easy targets and they have sex with them so some will be HIV and AIDS positive. In this area people will not open up that they are HIV and AIDS positive until they start to get sick. HIV and AIDS is increasing and it keeps on going round and round (FGI 1, 24/11/2011).

One participant claims that some of the people who participate in the sex network know that they are HIV positive (Interview 3, 22/08/2011). Some participants are of the view that

people who are HIV and AIDS positive consciously spread the disease around (Interviews 3; 4; 13). There is a commonly held notion that when a person is HIV positive they should die with others rather than die alone. People do not disclose their HIV status nor is it easy to detect if someone is HIV positive until they become bed ridden. A male participant aged 54 years said "especially when it is a woman who is HIV positive, she spreads it to others" (Interview 4, 23/08/2011). Participant four was of the view that women who are HIV positive are more inclined to spread HIV. In the interviews with women, they feel that men are mostly responsible for bringing HIV and AIDS into the home (Interview 5, 15/09/2011). It was not clear from the interviews as to what the reason would be for women to deliberately spread HIV and AIDS to uninfected men. Thus, there are conflicting understandings about the spread of HIV. Although the bulk of literature reviewed blame susceptibility to HIV on men, there is literature that also demonstrates women whose behaviour exposes men who then become infected (Bene and Merten, 2008; Drimie and Casale, 2009). Although this study did not focus on HIV transmissson in the household, the blaming of men as being responsible for the transmission of HIV within the household is important. The Nyamakate community is patriarchal, hence men have more power to control household resources and can afford transactional sex.

The second reported sub-theme for the high rates of illness resulting from HIV and AIDS related illnesses was the abandonment of the Shona culture and traditions. A number of participants complained about the young generation abandoning the customary practices in all spheres of life. Elderly participants in FGI 1 (24/11/2011) argued that today's generation does not consult with the elderly before courting and marriage. Older women participants alleged that if a young man would consult before marrying someone from the area, he would be cautioned about the 'bad girls' as community members are aware of their behaviour. They further claimed that in this day customary traditions are not practised as children are marrying others from anywhere in the country, and, as a result the partners do not know each other's histories. One old woman narrated how courtship and marriages were conducted in the past.

> In the past the children used to come to old people for relationship counselling but these days they do not come to us. As we live in this area we can see who is a dignified boy or girl to marry, but these days they mainly consider who has money

> and wealth. They even tell us that we cannot teach them anything. So even the one who contracts a disease such as HIV and AIDS or STI, these days they do not tell their elders [Grandparents and Aunties]. If they did tell us we would be better able to advise on their marriages or sex partners (FGI 1, 24/11/2011).

The third sub-theme related to the increasing incidence of sick people in the Nyamakate area is the migration of sick people from urban centres to the area. People who migrate to urban areas for economic opportunities maintain social links with the people in the rural areas through kinship networks. Literature demonstrates that some of these people migrate back to the rural areas when they are sick (Drimie, 2002; White and Morton, 2005; Ndlela, 2008). More than half of the 13 affected households reported the migration of an ill patient from outside the Nyamakate community into the area for care giving. One participant (Interview 36, 30/10/2011) said, "… people originate from here and go to live somewhere - they usually come back here when there are already sick."

The final sub-theme on the theme of the increasing incidence of illness is the increase in sick children. Evidence from the study reveals the occurrence of children born with HIV and AIDS. Participants asserted that HIV and AIDS positive mothers give birth to HIV positive children who usually fall sick and finally die (Interviews 10; 17; 36 and 39). Like all other orphans, these infants are usually cared for by their grandparents if the mother passes away. In the interviews, participants raised three factors that limited old people from being competent care givers to the sick orphans. Firstly, they lack the knowledge of modern diseases and medicines. Secondly, they are not strong enough to walk long distances to the clinic for medical care, and finally lack financial resources required for taking care of these HIV and AIDS positive infants.

The theme of the increased incidence of illness was repeatedly linked to the problems associated with care giving. In the past the burden of HIV and AIDS related illnesses was the responsibility of the home-based care givers. Nyamakate used to have Home-Based Care Programme that was supported by Batsirai Trust but the programme was stopped. Local people had no knowledge as to the reason why the programme was stopped. Some of the

people involved in the Home-Based Care Programme are now involved in the behaviour change campaign being run by Batsirai Trust, but this has also ceased. The HIV and AIDS programmes which are donor funded have been found to have limitations as they depend on the availability of funds, funders' interests and the partnership between their interests and government (Ford, 2009). The disruption of the Global Fund in Zimbabwe meant a number of the programmes that were being funded, such as Home-Based Care Programmes, were abruptly stopped, leaving communities to cope with their own means[57].

In the Nyamakate context, besides NGO assisted programmes, community members assist in care giving for the terminally ill. As indicated above, such help from community members depends on the relationship between the affected household and its community[58]. The community participates in care giving activities, although the primary responsibility rests with the household housing the patient. The following quotation indicates how the community helps affected households and the limitations to such help which is passed on to to HIV and AIDS affected households.

> … Care giving to the HIV and AIDS patient is a serious burden to the household and at times the community is forced to intervene. We have experienced cases where care givers are not able to go to work in the fields which mean the household will have a reduced amount of food to eat. At times, other members of the community with a lot of food will help them. But these days there is no such a person with a lot of food. Some community members help, but it is seldom (FGI 1, 24/11/2011).

The sub-theme of prostitution was identified as a community problem associated with HIV and AIDS. Out of the five people who brought up the issue of prostitution in household interviews (Table 7.4), four were married females. The discussions show that women suspected that their husbands were involved in commercial transactional sex while at the

[57] A similar trend was noted by Biehl (2011) that HIV and AIDS affected people are jeopardised by the change of focus in NGO programmes. Frequently, the vacuum that is left remains unfilled and this renders HIV andf AIDS affected households vulnerable (Biehl, 2011).

[58] Resettlements such as the Nyamakate community lack strong bonds of social capital as shown in the literature review chapter.

local bars. One woman remarked, “Everyone [most men] has sex with prostitutes, there are a lot of unfaithful spouses within the Nyamakate area” (FGI 1, 24/11/2011). The hot spot for transactional sex was identified as a Truck Inn that used to operate from BH 2 township (FGI 1; 2 and Interviews 37; 40; 45). Household 37, the representative of which was male, asserts that spreading of HIV and AIDS reached its peak during the time of the Truck Inn (Interview 37, 11/11/2011). The government claimed that it wanted to build a psychiatric hospital in the same location as the truck inn and consequently the prostitution at the Truck Inn was stopped (Interview 53, 07/12/2011). One married female participant who was on ARVs said:

> Prostitutes used to be rampant at the bars especially at the Truck Inn by BH2 Township. It used to disturb the area because our husbands liked to patronise such places so one would not know what they were up to when they are there (Interview 40, 14/11/2011).

Prostitution was affecting the households in the Nyamakate area through introduction of HIV and mistrust amongst spouses. It was asserted that if one of the marriage partners contracted HIV it would be passed on to the other. According to interview 5 (15/09/2011), “I think males have sex with prostitutes and contract HIV. Then the man passes it on to their spouses who wait innocently at home …”. Other other social problems associated with HIV and AIDS, such as sickness, death and orphans in the Nyamakate area, which are evident in table 7.4.

The seventh theme to emerge from the data is the interruption caused to community projects by HIV and AIDS (Table 7.5). Four interview participants raised concern over the way in which HIV and AIDS negatively affected community projects. It was claimed that HIV and AIDS reduces the ability of both the care giver and the ill person to participate in community project. The participants used specific terms to refer to the extent to which an HIV and AIDS infected person is affected by the disease, namely: ‘on ARVs’, ‘not bedridden’ and ‘bedridden’. It goes without saying that the bedridden patient would not be able to do any type of work (Interview 18, 29/09/2011). The community work projects, which were identified by the participants, include: repairing of roads, a building project at the school, repairing boreholes, filling in gullies and attending and assisting with funerals. It emerged that community members were reluctant to allow non-bedridden HIV and AIDS infected people to carry out community work. This is apparent in the following statement:

> [To show commitment] …the ill people will be required to attend the community work sessions and people would give them light duties. These people normally do nothing at the end of the day besides sitting. Even if we want them to dish out *mahewu*, people resent them. People will be afraid of drinking *mahewu* served by an HIV and AIDS positive person. We are afraid of contracting HIV and AIDS through the *mahewu* (FGI 2, 24/11/2011).

The participants had the following to say about how HIV and AIDS affected members of the community to contribute communal work:

> An ill person would not be able to work as much as healthy person does. For example the work done by 30 healthy men and the work done by 30 ill people would be different (FGI 2, 24/11/2011).

> For example, people might want to repair a road or the boreholes, the people with HIV and AIDS are supposed to do light jobs, this leaves a huge workload on those who are healthy. There are so many people in this village but when it comes to community work – for most of those people on ARVs, we do not even consider their contribution as significant. So we have to cover up for a lot of people in the village because of illness (Interview 29, 22/10/2011).

Participants highlighted that the association of HIV and AIDS and witchcraft was in-part responsible for suspicions and hatred within the Nyamakate community. Literature shows that in southern Africa, a number of black ethnic groups associate HIV and AIDS related illness and death with witchcraft (Ashforth, 2002; Rödlach, 2006). Social networks are destroyed as the HIV and AIDS affected family desires to take revenge for the illness and death of their beloved (Ashforth, 2002). From the focus group interviews, it emerged that some HIV and AIDS affected households blamed the illness of their beloved on witchcraft (FGI, 1; 2; 3). This was blamed on the failure of the ill patient to disclose to the family their HIV and AIDS status, and hide behind claims of witchcraft and spells. The situation is aggravated by the fact that it is mainly the elderly people who assume the caregiver role for the sick person and these are those who most believe in witchcraft. These old people believe in seeking help from traditional healers and prophets.

The attachment of ill health to spiritual and/or supernatural curses is prevalent amongst traditionalists and Apostolic sects. Women from the Apostolic sect who dominated the FGI held at Charlie Village indicated that, according to their faith, every problem in life (including HIV and AIDS) is spiritual (FGI 3, 26/11/2011). It was asserted in FGI 3 that, "To us any disease, even HIV and AIDS, if it infects me I go to the prophet who will pray for me. Any disease is cured by prayer to God, because there is no disease that is above him" (FGI 3, 26/11/2011). Such beliefs will lead people to rationalise the idea that there is a spiritual force that predisposes a person to contract HIV and AIDS and become ill thereafter. It is usually the very old members of families or communities who are held responsible for bewitching the person (FGI 2, 24/11/2011). The aged people are blamed for their long life spans that they have survived yet their peers passed away. It is not clear from the interviews why the aged are blamed for witchcraft based on lifespan. One old women reacted to this position by saying, "… the young people are stupid they think witchcraft comes when you are old they forget that they will also be old one day" (FGI 2, 24/11/2011). Such accusations have reduced social cohesion within the Nyamakate community as some families hold grudges against each other (FGI 2, 24/11/2011). Instead of using the social networks to assist in caring for the affected household, some affected households are cutting ties with their social networks, and, as a result of suspected bewitching, some households end up hiding their patients from the community (Interview 32, 23/10/2011; FGI 1, 24/11/2011; FGI 2, 24/11/2011).

It was reported that, partly due to the fear of witchcraft, most HIV and AIDS affected households are in the habit of hiding the illness and death that results from AIDS. Participants raised a number of reasons as to why people hide their ill relatives from community knowledge, being: suspected witchcraft practiced by neighbours and relatives (FGI 1, 24/11/2011; FGI 2, 24/11/2011; Household interview. 32, 23/10/2011), fear of the patient being taken to hospital (FGI 2, 24/11/2011), fear of embarrassment as to the way the caregivers are treating the patient (FGI 2, 24/11/2011), and fear of people gossiping about their patient within the community (FGI 1; FGI 2, 24/11/2011) The Apostolic sect members hide their patients because they do not want to show that any of their members have contracted HIV and AIDS (FGI 2, 24/11/2011).

The eighth theme emerging from the data on the impacts of HIV and AIDS on the Nyamakate community is the disturbance of cultural practices. One birth attendant noticed changes in the way deliveries and funerals were conducted; people now have to use gloves when delivering babies and washing corpses at funerals (Interview 21, 14/10/2011). However, she added that at times, when there is pressure and the gloves are not there, some of the birth attendants just delivered the babies because they were afraid that the innocent infant would die. Furthermore, the gloves are only obtainable from the local clinic which is likely to be at a distance from most villages (Interview 25, 16/10/2011). It was also reported that some of the people who were responsible for conducting important customary functions, such as rain making, had died from AIDS (Interview 45, 23/08/2011). Some of these communal practices, believed to be of benefit to the community, have declined as a result. The participants in FGI 2 (24/11/2011) narrated a story of how their community was surprised by members of the Apostolic sect that hide illness and conduct burial services during the night, an act forbidden in the Shona culture. It was reported that Apostolic sect members transport the corpse during the night for burial in another area. These families are always fined by the traditional leadership if discovered.

More than a quarter of the 40 participants raised the theme of anti-retro viral treatment. Out of this group, six participants indicated that Anti-retro viral drugs were helping to minimise the impact of HIV and AIDS in Nyamakate through reduced deaths and shortening of the duration of illness (Interviews 6; 9; 21; 22; 25; 31). During the data collection exercise the researcher interviewed some households with members who are on ARVs, and they were grateful for the ARV programme. One participant said, “Do you see these three children … their mother is on ARVs. … they would have been orphans if it were not for the tablets” (Interview 22, 14/10/2011). Another participant said,

> She came back [from hospital] and is surviving on ARVs as we speak. She can now work for her children and herself, you cannot even tell that she is sick. She now works very hard so that she gets food to stay healthy. She goes to sell her merchandise in Zambia and around Nyamakate (Interview 21, 14/10/2011).

All of these six participants asserted that HIV and AIDS patients on ARVs are sick for a short period of time before they die. One participant is of the opinion that, “The ARV programme is helping as people are no longer afraid of being tested” (Interview 31, 23/10/2011).

Finally, an important sub-theme that emerged is the impact of HIV and AIDS on the perpetuity of lineages. The clan is being threatened by the high death rates and the reluctance of parents to reproduce. One female participant who is 52 years old stated that,

> A lot of the people who are HIV and AIDS positive end up giving up reproducing yet their parents want them to produce grandchildren. Some of them give birth to sick children who die after their parents' death. So the clan will not grow it will instead reduce (Interview 32, 23/10/2011).

Couples are under pressure to reproduce in order not to let the name of the family die. One participant claimed, "Some women are being forced to have babies even if the couple knows that they are HIV positive and as a result the wife will die early" (Interview 17, 28/09/2011).

Numerous previous studies have theorised the impacts of HIV and AIDS (Urassa, *et al.,* 2001; Khan, *et al.,* 1999; Haacker, 2004; Ndlela, 2008). The evidence collected shows that the impacts of HIV and AIDS on the Nyamakate community and households are similar to what has been found in other studies in Sub-Saharan Africa. However, this study has interrogated the lived experiences of these impacts and gone beyond examining impacts quantitatively to show monetary gain or loss. The participants identified twelve ways in which HIV and AIDS is affecting their community. Death and the increase of orphans and vulnerable childrens (OVCs) were the challenges identified by most of the interviewed people. These findings critique scholarship that assumes that the heaviest burden of HIV and AIDS is during the morbidity stage (Oni, *et al.,* 2002; Goudge, *et al.,* 2007). The data presented in this section demonstrates the negative impacts of HIV and AIDS on the Nyamakate area at the community level, however, there is need to examine the impacts of the pandemic at a micro-level. In the next section the study will discuss the lived experiences of households who were directly and indirectly affected by HIV and AIDS.

7.4 Household Experiences of HIV and AIDS

This section presents the findings related to the impacts of HIV and AIDS on the Nyamakate households. The literature shows that research that studies the impact of HIV and AIDS on the household level tends to be quantitative (Mtika, 2001; Agboh-Noameshie, *et al.,* 2007;

Meher, 2007; Gill, 2010). As demonstrated in chapter two, these studies are mostly from the discipline of economics and have focused on quantifying income loss and levels of consumption. However, qualitative studies investigating the impacts of HIV and AIDS on households and the lived experiences are increasing (Hosegood, *et al.,* 2007, Schatz and Ogunmefun, 2007). A UNAIDS report acknowledged that family disaggregation has been a major effect of HIV and AIDS on households (UNAIDS, 2005). In the case of the Nyamakate community, the participants had numerous divergent experiences with HIV and AIDS. The participants can be classified into three themes depending on their experiences to HIV and AIDS, namely: directly affected, indirectly affected and unaffected (see Figure 7.8-7.10).

Four of the ten sampled households from Hotel Village were HIV and AIDS affected households (Figure 7.8). The location of HIV and AIDS unaffected and indirectly affected households are shown in Figure 7.8. Hotel Village has two indirectly affected households and four unaffected households. Four of the ten sampled households in Juliet Village were unaffected by HIV and AIDS (Figure 7.9). There were two clusters of three households sampled as HIV and AIDS affected and indirectly affected, and their locations are shown in Figure 7.9. The majority (55%) of the 20 sampled households in villages 25 and 27a were HIV and AIDS unaffected households (7.10), while 30% of the 20 sampled households were HIV/ AIDS affected.

Out of the 20 participants who had cared for HIV and AIDS patients, 13 cared for an ill person who resided in the household (Table 7.2 and 7.3). Five affected households cared for more than one ill person within the household. About three-quarters (70%) of the affected households had cared for someone who came to their household when they were already ill. Firstly, I will present the micro-level detail of the different circumstances under which most of the ill patients joined the households where they were receiving care. The previous section has presented the networks of social relations between urban centres and rural areas such as the Nyamakate community. The arrival of these ill people in the Nyamakate area from urban areas took place under different circumstances as demonstrated by the following statements:

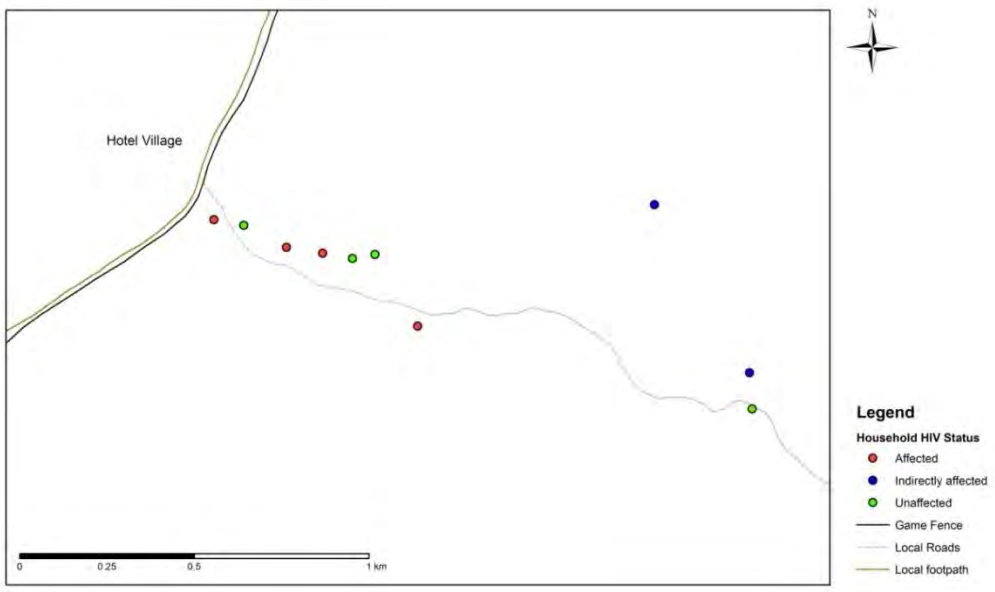


Figure 7.8: Locations of HIV and AIDS affected, indirectly affected and unaffected households from Hotel Village

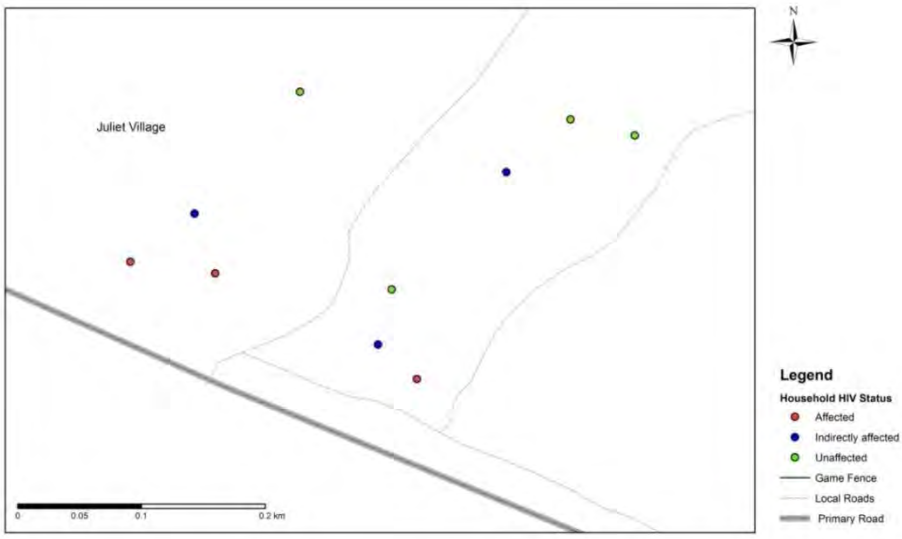


Figure 7.9 Locations of HIV and AIDS affected, indirectly affected and unaffected households from Juliet Village

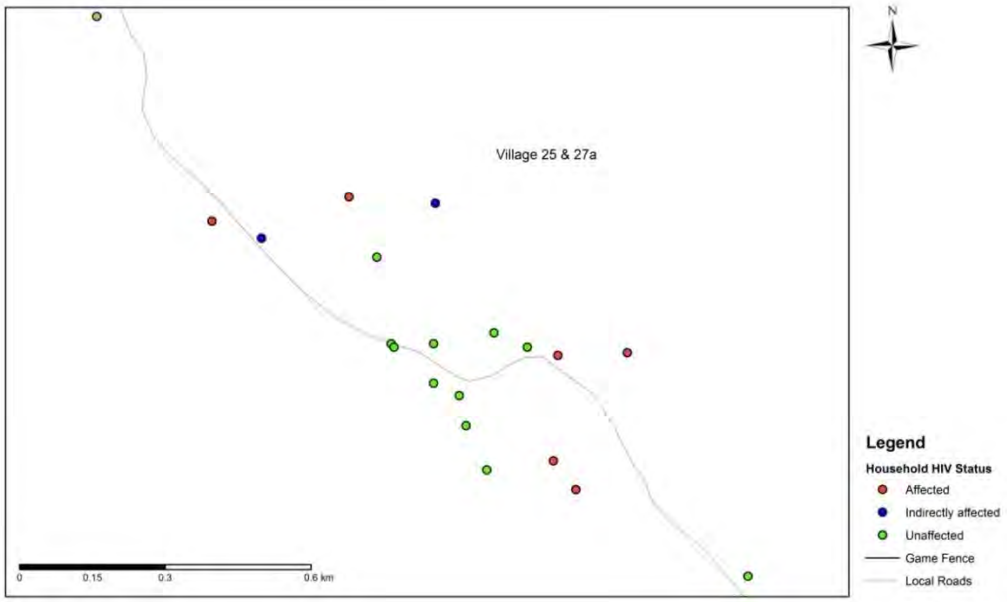


Figure 7.10 Locations of HIV and AIDS affected, indirectly affected and unaffected households from Hotel Village

I stay with two patients [a male and female] who are not my biological children. When her father passed away she stayed with the mother [Participant's elder sister]. My elder sister who used to take care of her [the patient] had a stroke which she is not recovering from. So she came to me for caring since she was already ill. It is believed [within the family] that her HIV and AIDS illness caused my sister who is the mother to have a stroke. My brothers do not want to see or help her [patient] because she is responsible for her mother's sickness (Interview 17, 28/09/2011) (See Figure 6.5).

Both my sisters came here when they were already sick. They were coming from their husbands' homes. The husbands pushed them back to their maiden home, which is this household, when they realised that the illness was progressing unabated by medical care. So that is how they came and we cannot send them back because this is their home in as much as it is mine. The husbands do not come to visit their wives. My other sister was left at the township by the husband. She sent word to inform us that she had been left at the township and she required to be fetched. We had to go and get her from the township with a scotch cart. When we got to the township we did

> not find the husband, he had already returned to Harare. He had not even paid *lobola* (Interview 2, 13/09/2011).
>
> He had his wife, but the wife ran away and he went to South Africa before the husband fell very ill. … so the day he was discharged from the hospital for home care, … we came with him here (Interview 27, 17/10/2011).
>
> He was working in South Africa. Someone we did not know phoned to inform us that our son was seriously ill in Johannesburg. We asked them to send him on a bus to Harare. I went to fetch him in Harare then came with him here (Interview 31, 23/10/2011).
>
> She fell sick at her husband's family home. Then the husband's family summoned me to their homestead. When I went there the situation was bad [the husband was also sick] and it was suggested that I bring her here for care taking (Interview 32, 23/10/2011).

The testimonies above demonstrate the difficult conditions under which sick people joined the households of relatives seeking care. In the case of the respondent from Interview 2 above, the man did not pay *lobola,* and dumped the sick woman at the local shopping centre for fear of being asked to pay *lobola* or even being beaten by her family. The last case reflects a typical case where relatives are obliged to take on the responsibility of care giving. Gender theorisation allows for the analysis of husbands abandoning their sick spouses. Gender analysis allows for the consideration of men who are oppressed by norms and values that are imposed on them by more powerful men and women (Jewkes and Morell, 2010). Husbands who abandon their sick spouses do so because they do not have the money to pay the *lobola* and now fear *ngozi*[59]. The elder men of the family/lineage are strict on not admitting any man who has not paid *lobola* in to the homestead.

The second part of this section will discuss how different people across socio-economic groups experience HIV and AIDS. The experiences of HIV and AIDS amongst the affected households are dependent on the socio-economic status of the household. Scholars argue that wealthier households do better than their poorer counterparts in all measures of health status,

[59] *Ngozi* are the restless and vengeful spirits of people who died aggrieved.

including coping with HIV and AIDS (Fenton, 2004; Mishra, *et al.,* 2007). The findings of this study indicate that the well-to-do households could manage the care giving roles much easier than the poor since they could afford good nutrition and medication (Interview 29, 22/10/2011; 39, 12/11/2011). Two households indicated that the ill person had been working and had saved money and so not many challenges were reported because the care givers used the patient's money to look after him (Interview 29, 22/10/2011 and 39, 12/11/2011). Participant 29 (22/10/2011), who took care of his uncle said, "Most of the things he wanted like food and medical care, he used to provide us with the money." Well-to-do households did not report selling livestock in order to cope with care giving. However, other relatively wealthy households did report problems associated with care giving. For example, household 40 has the highest level of income amongst the interviewed households but reported food shortage and having to receive food packs from the clinic during drought years.

On the other hand, relatively poor affected households reported a number of problems associated with caring for a HIV and AIDS patient. The experiences of poorer HIV and AIDS affected households show them suffering and struggling to cope with caregiving. Participants indicated that they encounter the following challenges in having an HIV and AIDS patient: no caregiver within the household, failure to manage opportunistic infections which complicate the patient's medical condition, food shortage, patients who believe that their illness is as a result of witchcraft; patients resisting being tested for HIV and AIDS, and low levels of appetite.

The section has presented data on the impacts of HIV and AIDS on the Nyamakate households. HIV and AIDS patients mostly join the households that take care of them after they have come from outside the Nyamakate area. This shows the strength of social networks in HIV and AIDS care. Women who co-habit with men are worse off as some of the men desert them and simply send word for them to be collected. The section further presented data on the different experiences of HIV and AIDS affected households depending on their socio-economic class. Finance related issues raised on the different experiences of HIV and AIDS by poor and wealthy households will be discussed in more detail in the following section.

7.5 Financial Impacts of HIV and AIDS

This section presents data on the financial and economic impacts of HIV and AIDS on affected and indirectly affected households. As indicated above and in Chapter Two, most of the research to understand the impact of HIV and AIDS takes an economic or financial approach to evaluate the costs of HIV and AIDS. These quantitative studies point to the loss of household income as the major impact of HIV and AIDS (Oni, *et al.,* 2002). Critics of this literature have found these studies to be limiting since they rely on panel data which might have gaps, plus panel data does not show diversity (Yamano, *et al.,* 2002; Biehl, 2011; King, 2012). Since this study is informed by post-structural political ecology, it does not focus only on the impacts of HIV and AIDS on household economy but also attempts to understand the experiences of the structural challenges which are posed by the economic impacts of the HIV and AIDS pandemic. The evidence shows that affected and indirectly affected households experienced different levels of financial impacts as a result of taking care of an HIV and AIDS affected person(s). A small number of participants indicated that they did not experience any shocks to their financial status as a result of HIV and AIDS (Interviews 10; 29; 37 and 39). When participants reported that HIV and AIDS did not affect their finances, this was usually because another family member (outside the household) was incurring the costs of looking after an ill patient, or the ill patient had adequate resources of their own to meet their care taking needs. One participant alluded to the aforementioned reasons for not experiencing financial impacts when he was taking care of his sick relative. He said,

> At that time [two years back] it was easy for me to care for my uncle, it never affected my income. I used to stay with my grandmother and was dependant on her. My uncles used to look after my welfare, but unfortunately one of them fell ill. I was assigned to look after him since grandmother was a woman and could not bath or dress him. My other uncles continued supporting the household financially with medicines and sundries. I did not have to buy food or clothes, and I did not have a wife, unlike now. Furthermore, the sick uncle usually used his savings from the bank (Interview 39, 12/11/2011).

A middle aged participant from Juliet Village reported that his elder brother (who is a medical doctor) provided much of the financial aid needed in caregiving, but also referred to the difficulties experienced due to the economic situation (Interview 37, 11/11/2011). He

said, "… in those days things were still better. The economy had not collapsed in the early 2000s" (Interview 37, 11/11/2011). The above statement alludes to the fact that care giving for HIV and AIDS patients was much easier prior to the country's economic crisis[60].

Most of the participants who had been affected by HIV and AIDS reported a number of financial impacts that were brought about by the disease such as: the negative effect on work for bed ridden patients the loss of assets and budgetary changes through loss of income contributions to the household. Most (13 out of 24) of the responses indicated that bedridden patients were affecting productive work leading to a reduction in income. The participants highlighted that it is the general norm not to leave an ill patient unattended. This subject raised debate in all the FGIs. A participant narrated an account of how HIV and AIDS affects productive work, especially agriculture, which is the community's lifeline.

> The challenges associated with taking care of an HIV and AIDS patient are many, for example, she had to be attended to at all times. Here in the rural areas we have to go to the fields because that is our major livelihood strategy. In this household there are no children who spend the day at home. The mature children go to school and we have to go to the fields. But because of the ill patient one of us has to stay behind and look after the ill patient. Thus, our income generating activities are affected. We cannot go with her to the fields because she could not walk and there is no appropriate shelter (Interview 3, 13/09/2011).

There is evidence to suggest that caregivers are experiencing a dilemma of whether to be with the patient all the time or to attend to their productive duties that guarantee them a livelihood. It was reiterated that it is wrong to leave an ill person in order to attend to any other duties. This cultural practice is under threat due to the wide-spread morbidity. The debates amongst participants in a FGI held in Sierra Village demonstrate the controversies around the issue of leaving a patient unattended.

> [A female carer in her mid-20s said] If we do not go to work in the fields, how do we survive [She is part of the household]? I bath and cook for the patient and live them in

[60] The background to the health context in Zimbabwe presented in Chapter Four demonstrates that the country's health sector has declined drastically from the mid-2000s to 2010 in response to the national economic crisis.

> the house. The patient has to reach for his food and eat it. It does not matter who it is because I also have to survive. Even if the relatives are not happy I do not care, do they want me to die from hunger? When someone is dying, they die with their mouths. So when the patient dies and am not there I would come and inform his relatives by cell phone.
>
> [A male in his mid-30s] What she is saying is right but this depends on how close you are with the ill patient, I think this is just theoretical talking that she is saying it depends with the state of the patient. If a person who is dear to you is ill and bed ridden it is different… I will go no way.
>
> [The first woman responded to the man] This is not totally true because I have to fetch water and go to the fields. If I do not do these things what will happen? [Chorus of people respond] so you have to call their relatives.
>
> [An old lady joined the debate] When Tawanda was ill at my house did I go to the field? I used to stay and watch over him. Well if the patient can still wake up and help themselves we go to the fields but if they are bed ridden them we do not go (FGI 2, 24/11/2011).

The group did not come up with a common course of action on whether they leave the patient unattended or not. However, there are differences in the perceptions and practices of older and younger women, with males siding with the older women on this issue. Those who took the middle position argued that they would continue going to the fields leaving the patient fed and bathed because otherwise the household will starve to death (FGI 2, 24/11/2011). These findings suggest that local tradition forbids leaving sick people unattended, however, it appears that leaving them unattended as a practice is happening and growing in occurrence. The Shona culture, like others in Africa, bestows caring and water fetching roles to women and the patriarchal system reinforces them (Wingood and DiClemente, 2000; Jewkes and Morell, 2010).

HIV and AIDS affected households reported that the toll that the pandemic has taken on their expenditure pattern. All the six participants who alluded to this point noted that HIV and AIDS caused the households' expenditure cost to increase. The ill person requires expensive medication, food, hospitalisation and transport to and from hospital for check-ups and

treatments (Interview 24, 15/10/2011). One participant from Hotel Village explained how HIV and AIDS results in people sacrificing some essential goods and directing all funds to the caring of the ill person. He said,

> The little money and assets that are there will be redirected to helping the ill person. At times you would have earmarked the money for school fees or books but you end up buying food and medication for the patient (Interview 22, 04/11/2011).

Despite literature demonstrating the increased household costs due to growing medical, sundry and food costs, the households in the Nyamakate area are reluctant to define this as a 'problem,' per se. Participants reported that the money spent while caring for a patient should not be viewed as 'money wasted' since no one wants any person to die. One participant argued that, "It is culturally wrong to complain over money spent in trying to save someone's life. Thus, it should not be taken as a problem" (Interview 3, 13/09/2011). This explains why families try by all means to get the money to provide for the ill patient. However, these financial sacrifices are also viewed as a result of unplanned expenditure affect their budgeting within the household (Interview 35, 29/10/2011).

The experiences of HIV and AIDS affected households occur at a micro-scale within the households as a product of the social actor's view of his or her reality. Households lose income through loss of productive labour and increased costs incurred. However, what is important is not how much is lost but the experiences of the household as a result of this loss of income. This demonstrates how the social actors' interpretation of the loss of income due to ill health is informed by cultural beliefs. However, studies on the impacts of HIV and AIDS seldom interrogate the coping mechanisms being used by the household or community. According to Haddad (2001), the coping mechanisms reflect the plethora of micro impacts that the household has to deal with in the short term. The next section will present the coping strategies adopted by those households taking care of HIV and AIDS affected household members.

7.6 Households Coping Mechanisms

This section presents the strategies employed by the Nyamakate households in order to cope with the impacts of HIV and AIDS. The preceding sections have presented a range of the impacts of HIV and AIDS on the Nyamakate households and community. Literature has presented the numerous strategies that have been adopted by rural communities in order to cope with the effects of HIV and AIDS on the rural households (Munthali and Ali, 2000; Mbaya, 2002; Bryceson and Fonseca, 2006; Mutangadura, 2005; Ansell, 2009). While the literature has documented the strategies adopted in an effort to deal with HIV and AIDS associated ill health within the household and community, further analysis is necessary in order to understand their successes or failures. As presented in Chapter Two, the concept of coping can be confusing because of the differing definitions in the literature focusing on different stages and time scales.

In principle, a coping strategy must reverse the adversities confronting the household until it recovers. I agree with Marais's (2005) argument that the 'coping' discourse acts to endorse the status quo so that the structure neglects improving the poor. Yet in reality, poor households are failing to cope because the strategies adopted as coping mechanisms cost too much and they create stress for the individual or household in future (Haddad, 2001). Governments, NGOs and the private sector are increasingly adopting liberal policies that praise such strategies as the poor selling their assets in order to cope, in the process drawing them into the logic of capital (Marais, 2005; Biehl, 2011). Scholarship around the concept of coping with HIV and AIDS indicate that the concept has limitations in its use, since most of the strategies adopted such as selling livestock and property, and deregistering school pupils from school will render the household unsustainable (Rugalema, 2000; Barnett and Whiteside, 2002; Marais, 2005). Thus, the concept of 'coping' is limited because the household would not recover from the impact of HIV and AIDS, and the strategies adopted will create new problems.

Evidence reveals that the Nyamakate households employ four major strategies in order to cope with the burden of HIV and AIDS. These are the selling of livestock, production of vegetables for sale, borrowing, and petty trading. Most of the participants who were directly

affected by HIV and AIDS reported selling some of their livestock in order to cope. Livestock serves two purposes in relation to HIV and AIDS: it is a source of food and secondly, a source of income (Interview 21, 14/10/2011). Participants indicated that HIV and AIDS victims demand meat in their diet (Interview 16, 28/09/2011). Faced with this increase in demand for nourishing food, the households do not have the money to afford such food. All the households that had cared for AIDS victims were forced to slaughter fowl in order to provide meat for the patient. Some households would even slaughter goats in order to meet the increased demand for meat. For example, participant 29 reported that he had to slaughter two of his goats for meat because the uncle wanted goat meat only, despite the fact that his uncle had money to provide for himself.

Sixteen of the 13 HIV and AIDS affected households that participated in the study reported selling their fowl and other livestock in order to raise money for medication, hospital bills and food (e.g. Interview 2, 13/09/2011). Participant 21(14/10/2011) had to sell her goat in order to raise money for transport and medication to go to Karoi hospital with her HIV and AIDS positive sister when she was ill. A further strategy for coping with HIV and AIDS patients was for households to set up vegetable gardens. Participant 40, who was on ARVs, indicated that the family had established a vegetable garden in order to cope with the food demand of someone who is on ARVs. She said, “We know that we have to work in order to raise enough food or money for food. We need food to maintain ourselves healthy and strong. We usually cultivate our own food stuffs like beans, peas, cow pea and maize” (Interview 40, 14/11/2011). One care giver has also established a vegetable garden as a fund-raising project. She said, “I had to start a vegetable garden and I used to sell tomatoes and leafy vegetables to people from Kariba. So I would raise money for her [the patient] to travel to Karoi for her monthly medication” (Interview 16, 28/09/2011). The participants who used vegetable gardens as a coping mechanism seemed satisfied with them as they get food and income for the household.

Two participants indicated borrowing from their neighbours as a coping mechanism (Interviews 16 and 29). Participant 16 (28/09/2011) reported that she borrowed money in order to meet expenses that were related to caregiving. Participant 29 borrowed a scotch cart in order to transport a ill uncle to Nyamakate clinic.

The coping strategies employed by the Nyamakate households are similar to those documented elsewhere in the country and southern African region. The Nyamakate community case is unique in that the households' coping strategies are the selected initiatives in the face of limited institutional support. Thus, the structure predisposes the households to vulnerability and this accords with the argument of political ecology. All the coping strategies adopted by the households are to remedy the short term crises which could be prolonged because HIV and AIDS patients are sick for prolonged period. In the long term these coping strategies would erode the assets that could benefit the household in the future. The current discourse of 'coping' focuses on the short-term rather than the long-term, hence it is limited.

7.7 Conclusion

Chapter Seven demonstrates the impacts of HIV and AIDS on the community and the households. The impact of HIV and AIDS on households and community has been theoretically analysed in relation. The impacts have predominantly been in the domain of income and expenditure on one hand, and the decrease in household labour and the resulting loss in agricultural productivity on the other. This study has gone beyond quantifying the impacts of HIV and AIDS by interpreting the household and community experiences of HIV and AIDS. Two groups of the study population reported that HIV and AIDS is impacting their livelihoods. These groups are the affected and the indirectly affected. HIV and AIDS has had impacted family structure, community, household livelihoods and financial resources.

The research demonstrates the differences in the socio-demographic structures of HIV and AIDS affected households, and the indirectly affected and unaffected on the other side. The affected households are usually composed of multiple generations. These households composed of the household heads and/without spouse, his or her siblings, and either his or her grandchildren, or siblings of other relatives. Both FGI and household interview participants indicated 12 ways in which HIV and AIDS has affected the Nyamakate community. These include the death of beloved and productive people, an increasing number of orphans and child-headed households, an increase in old people, witchcraft accusations, an

increase in opportunistic infections and prostitution. The community impacts of HIV relate closely to the household level impacts of a household affected by HIV and AIDS. However, the financial impacts of HIV on the household were conspicuous. Financial impacts highlighted in the study included: loss of productive labour time asserts income, modified budgets and priorities and increased expenditure.

The Nyamakate households and community experiences numerous negative phenomena as a result of HIV and AIDS. The results presented in Chapter Seven demonstrate that women carry a heavier burden of HIV and AIDS in the Nyamakate community. A number of studies from Africa show similar results (Wingood and DiClemente, 2000; Gillespie and Kadiyala, 2005; Mangoma, *et al.,* 2008; Drimie and Casala, 2009; Connell, 2012). Women are subjected to patriarchal social systems that confine their roles to household chores and caring for the sick (Wingood and DiClemente, 2000). Cultural practices sush as *lobola* and gender roles resulted in husbands not taking care of sick wifes and resoughting to sending them to their maiden families for care. Thus, the impacts of HIV in the Nyamakate community had a gender dimension which informed the coping strategies adopted.

The households and community largely devise their coping strategies with or without support from the macro-institutions. From the experiences highlighted and the coping strategies which were reported, the evidence shows that the majority of households were coping. Households responded mainly by selling assets to cover costs and sacrificing productive labour, which reduced income and created more poverty. Some scholars have argued that these coping strategies are more damaging to the household's well-being in the long run (Rugalema, 2000). Political ecology assumes that social actors, when confronted with a short term crisis, use the natural environment in order to survive. Similarly, some affected households reacted to the impacts of HIV and AIDS by developing gardens. Arguably, this is a more sustainable coping strategy than that of selling assets and borrowing. However, relying on agricultural based coping strategies which rely on the availability of water and good soil is not effective. As indicated in the literature review chapter, the Nyamakate area is one of the areas most affected by climate change, hence it is experiencing water scarcity. The following chapter will discuss experiences of the Nyamakate household and community with water scarcity and variability.

Chapter 8: Community Experiences with Water Scarcity and Variability

8.1 Introduction

Chapters Eight constitutes the third results chapter of this study. Chapter Eight presents the status of water resources and changes in water variability in the Nyamakate area. Specifically, the chapter aims to understand household experiences, responses to, and interpretations of the impacts of water resources scarcity and variability on livelihoods and social well-being. Section 8.2 presents the natural resources utilisation typologies of the Nyamakate resettlement area in order to contextualise water resources in relation to other natural resource units. Section 8.3 presents the dynamics and struggles over access to water resources in Nyamakate. It shows how access and usufruct rights to water resources are informed by changes in power relations within Nyamakate. Section 8.4 explores the changes in water resource availability and the perceived driving forces for the change. Section 8.5 presents the coping strategies adopted by the households in order to deal with water scarcity and variability. Section 8.6 presents data on changes in water resources over time and the perceived reasons for the changes.

8.2 Natural Resource Units and their Utilisation Typologies

This section presents an overview of natural resources and their utilisation by the Nyamakate community. All the participants including those from the focus groups indicated that they relied heavily on the natural resources within the area. Numerous studies from rural sub-Saharan Africa have documented that rural communities rely on a wide range of natural resources (Thomas and Twyman, 2005; Frost, *et al.,* 2007; Chingwenya and Muparamoto, 2009). In Zimbabwe, rural populations occupy marginal areas which are characterised by low rainfall, frequent droughts and, frequently, poorly structured and infertile soils (Frost, *et al.,* 2007). Blaikie (2006) summarised the natural resources that communities utilise as follows:

> In southern Africa, there are typically forests, open woodland or grasslands for livestock grazing, wood supply, medicines, and famine foods; farm land for gleaning,

> grazing after harvest, and crop residues; wildlife for game meat and safari incomes; fish in fresh water lakes; and aquifers, tanks, and irrigation channels for domestic and livestock water supply and irrigation (Blaikie, 2006: 1942).

This chapter does not intend to explore all resources utilised by the Nyamakate households, but to offer an overview of natural resource utilisation. The natural resources being utilised in Nyamakate can be classified into four resource units, namely: soil, flora, fauna and water resources (Figure 8.1). This study focuses on water resource units. These resource units have different functions and their utilisation will be elaborated upon briefly below.

Firstly, the participants noted that the community relied on the soil as a natural resource for building material and agricultural productivity (Figure 8.1). Members of the community moulded bricks from the clay soils usually those found close to anthills. From observations by the researcher, all the households interviewed had at least one building constructed from locally moulded bricks as part of its wall. The traditional clay and pole structures still exist in about half of the homesteads interviewed. Soil fertility was reported to vary in the different sections of the Nyamakate area. One participant said, "Every farmer knows their soils and they grow appropriate crops … but at times you cannot do what you want because you might not have the seed or government asks us to grow maize [instead of other crops] in order to feed the country" (Interview 41, 13/06/2011). One of the major problems with the soil is erosion.

Participants indicated that soil erosion was rampant and is affecting the productivity of the soil, consequently reducing crop yields. (FGI 2, Interviews 8, 10, 27 and 30). One Hurungwe Rural District Council (HRDC) member who participated in the study indicated that the agricultural extension officer advised community members to construct contours against the slope in order to avoid soil erosion and the washing away of nutrients (Interview 53, 07/12/2011). However, the researcher observed that very few fields actually had contour ridges in place in the Nyamakate area despite contour ridges being scientifically effective in conserving soil (Mharapara, 1995; Zikhali, 2010). This finding is consistent with other research in Zimbabwe where it was revealed that some farmers resist the technical advice from extension personnel (Mukamuri and Mavedzenga, 2000). Structural political ecology

theorists support the view that erosion has both social and ecological dimensions, and argue that the interaction of the two within the political and economic context shapes vulnerability (Blaikie, 1985; Blaikie and Brickfield, 1987). This thesis extends this analysis to include the social actor. The contours demand a lot of labour which the agricultural extension institutions do not provide, moreso the distrust of scientific solutions by the local actors informs their decision not to undertake contour farming (Drinkwater, 1994; Warren, *et al.,* 2001).

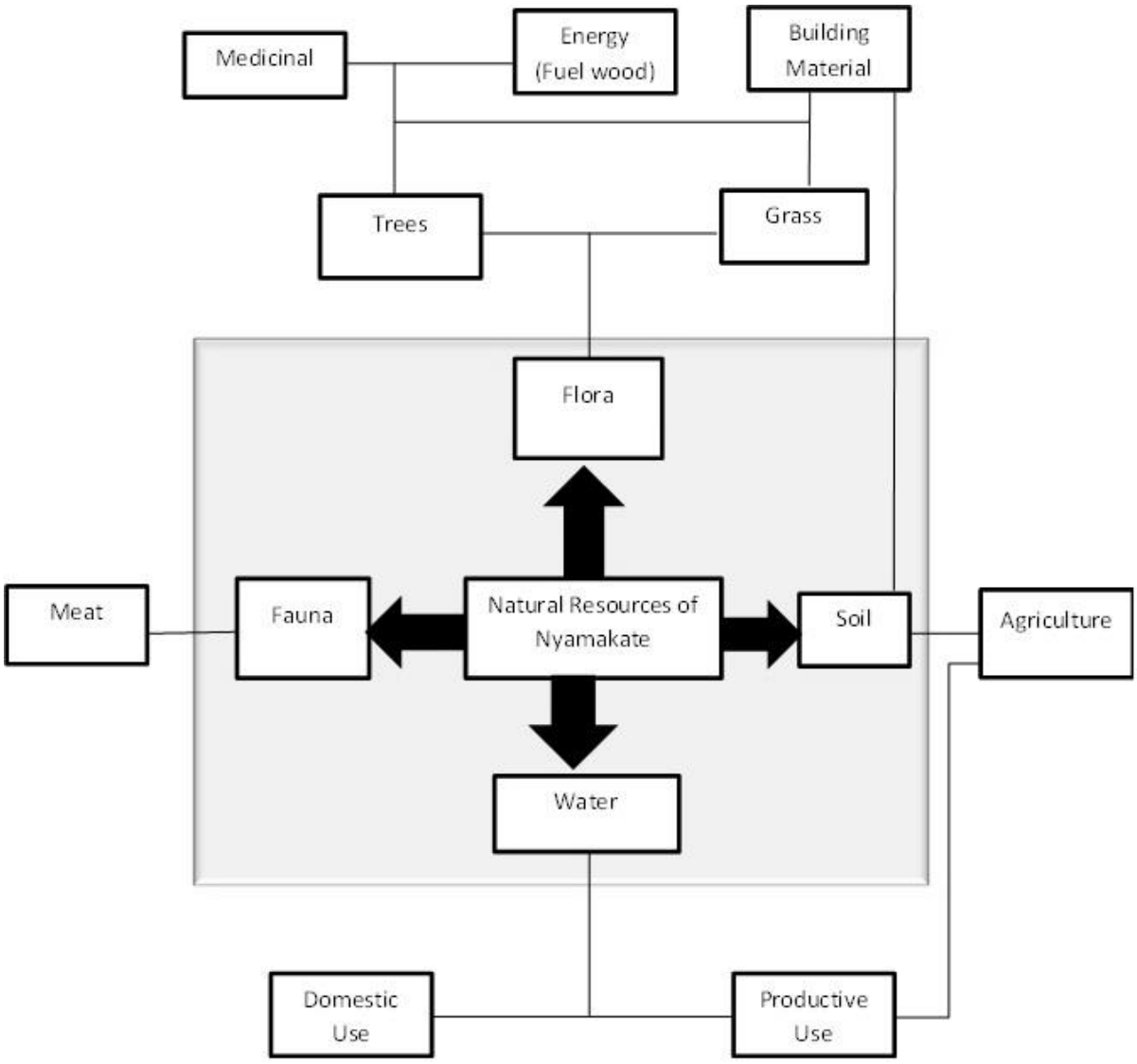


Figure 8.1 Natural resources base and the resources units for Nyamakate (Source: after Mbereko, *et al*., 2007).

The second reason identified by participants as a cause of soil erosion is the mismatch between population growth and the soil resource. Participants reported that land that is close to homesteads and fields is better protected than that in the unoccupied land. Eight out of the forty participants indicated that land close to their fields or homesteads and the surrounding areas was considered to be the property of the person hence not open for free use by everyone. For example, participants in an FGI noted that deforestation is higher in the unoccupied land and communal areas, such as grave sites, than it is close to people's fields and homesteads (FGI 1, 24/11/2011). Rural communities in southern Africa, including Zimbabwe, have been documented as having a complex bundle of management regimes that span from communal to *de facto* private property (Murphree, 1993). Failure to acknowledge such complex management regimes have seen the implementation of bio-centric policies, which are largely informed by the concept of the tragedy of the commons (Hardin, 1968; Bruner, *et al.,* 2000; Frost, *et al.,* 2007). This self-centred attitude towards land resources was blamed by participants in all the eight FGIs for being partly responsible for promoting soil erosion. Scholarship that seeks to understand the ability of rural resource users to manage their natural resource blames individualistic behaviour for lack of group solidarity (Ostrom, 1990; Murphree, 1993). Resettled communities, such as Nyamakate, have been documented as also having low levels of social capital due to the diverse ethnic groups (Barr, 2004; Nemarundwe, 2004), relatively recently settled together on the land with no concern for existing social bonds.

Figure 8.1 further shows that Flora is one of the natural resource units identified in the study as benefitting the community. Research has documented the value of forests to rural households (Nemarundwe, 2004; Aggrawal, *et al.,* 2012; Muyengwa, 2009). Trees and grass are identified here as the dominant forest products utilised by the Nyamakate community. The trees identified as priority use to the community are: Muvanga (*Pericopsis anglolensis*), Mutowa (*Diplorhynchus condylocarpon*), Mukonde (*Euphorbia ingens*), Muzaragomba[61], Mupfuti (*Brachystegia boehnii*), Mukweza [62] , Munhondo (*Julbernadia globiflora*), Mushumha (*diospyros mesipiliformis*), Mutohwe (*Azanza garckeana*), and Matamba (*Strychnos cocculoides*), among others. The participants utilise firewood as their dominant

[61] The scientific name could not be established by the researcher from any Zimbabwe Tree taxonomy database.
[62] The scientific name could not be established by the researcher. However, another study by Mangwandi (2002) mentions this tree as being useful as firewood in Hurungwe District.

source of energy, and wood is used for domestic and commercial use. The domestic uses include the use of firewood for cooking and as a source of warmth. All participants reported that tobacco production is significantly threatening forestry conservation by the Nyamakate households because the fuel wood is being increasingly used for the curing of tobacco. Participants of an FGI said,

> People are cutting down trees in order to support the production of tobacco because it fetches more money than other crops (FGI 1, 24/11/2011).
>
> The number one culprits are tobacco growers who cut down trees even if it is against the law to do so. He will argue that the tree is part of his field because it stands close to his field and he can do whatever he sees fit (FGI 6, 08/12/2011).

All the participants indicated that they had utilised trees for building material. The tree trunk is used mainly in constructing the roofing structure of the houses. All the participants also identified the construction of kraals and granaries as some of the uses of trees by the Nyamakate community.

Grass and wild vegetables are also cited as resources from the natural environment (Figure 8.1). The grass is mostly used for thatching. From observation, most of the houses in the area are thatched using grass. Households control access to grass that was around and within their fields (Interviews 4; 5; 7; 30). According to all participants from the household and focus group interviews grazing livestock on the pastures was reported to be open to anyone from the Nyamakate area. However, upon probing, it emerged that people could only graze their livestock within the boundaries of their village. A participant from village 27A said,

> It is not common for cattle from here to graze as far as beyond Rukomeshi River. Even the people there do not want our cattle there [do you admit their livestock to graze here?]. No, because every village has space for designated for grazing and every village should utilise that space (Interview 18, 29/09/2011).

This statement demonstrates the conceptualisation by local people of the access to grass species in the Nyamakate area. The bundle of overlapping rights to grass is similar to the rights of access related to trees. In the past, such individualistic views of natural resources was scorned but with resource scarcity and people increasingly adopting modernistic

ideologies like neo-liberalism this has led to a new way of conceptualising nature. People no longer up hold myths used in formulating traditional rules and compete in exploiting natural resources as they are being sold on the market. For example, people from the Nyamakate area harvest trees and mushrooms for sale in surrounding urban areas (FGI 2, 24/11/2011). Community members are divided as some pursue their traditional values while others pursue modern values of competition for natural resources. This is not uncommon, as Castree (2005) notes, nature can be understood in a multitude of property rights e.g. private, community or state (Castree, 2005).

Furthermore, participants reported that the community members harvested wild vegetables for domestic consumption. The wild vegetables used as relish included: mushroom, tsenza (*Coleus esculenta*), bononwe (*Amaranthus spinosus*), black jack (*Bidens pilosa.* L), nyevhe (*Cleome gynandra*) and sunha (*Cleome gynandra*). Participants of one FGI said, "Some of the natural resources we use include bononwe, sunha and mushroom but all these are declining in quantity these days" (FGI 1, 24/11/2011). These wild vegetables usually grow at the onset of the rainy season and are valued because this is the time when the exotic vegetables will be at their lowest productivity. It was observed that attention at this time is diverted from the vegetable gardens where spinach, rape and tomatoes are grown, to the fields. Furthermore, exotic vegetables do not do well in wet conditions and heavy rains, hence the indigenous vegetables become a key source of relish.

Figure 8.1 additionally shows that the local fauna are also used as a natural resource. The issue of harvesting wild animals was contested amongst the participants[63]. Some of the participants indicated that hunting of wild animals was still being practised and others argued that it was no longer being practiced. This contradiction could be because the harvesting of game is illegal and participants did not want to reveal that they are involved in an illegal activity. Scholars have identified the weakening of the government's conservation policy, especially in the Zambezi Valley, due to the economic and political crises, which has resulted in a reduction of policing activity to protect local fauna (Wolmer, *et al.,* 2004; Mhlanga,

[63] The Nyamakate resettlement shares a boundary with the Marongora/Mana Pools Game Reserve. Animals escape across the fence and come into the Nyamakate area. They have also been cases were people from the Nyamakate community cross into the game reserve to poach animals.

2009; McGregory 2010). A young participant (in his mid-20s) argued that people stopped killing wild animals long time ago because the animals no longer come as far out of the game reserve as the Nyamakate area, with the exception of lion and elephants (FG12, 24/11/2011). The majority of the people interviewed at the household level, however, denied hunting or benefiting from wild game. Moreover, some expressed the desire to hunt game which destroyed their crops, but expressed fears of being arrested.

Some of the participants admitted buying game meat within the area (FGI, 3, 26/11/2011; Interview 1, 26/11/2011). It was evident that there are some community members selling buffalo, impala and kudu meat locally. The researcher learnt of an incident involving a group of men who were gored by a buffalo which had managed to free itself after being snared (FGI 2, 24/11/2011).

Edible insects and small game also form part of the household livelihood (Interviews 1, 29). Insects that the community benefits from include locusts, ants (majuru) and flying ants (ishwa). They frequently hunt small game including birds, duiker, mice and hare. One of the participants who hunted small game did not consider this poaching since the meat was for domestic rather than commercial use. Small animals are not considered illegal to hunt by the interview participants. Thus only those who hunt big game should be labelled as poachers. As reported by a participant, “I do not go out to hunt, but if my dogs start pursuing an animal we help them kill it and eat the meat with family. Poachers on the other one would use weapons and set traps in the game area” (Interview 4, 14/09/2011). With the advent of the parks wildlife management system, rural communities are prohibited from harvesting wild game despite the size or species (Mhlanga, 2001). Communities have found ways of circumventing the law and hunting game anyway especially in areas where human-animal conflicts are high (Mhlanga, 2001).

Conservation areas have been under-theorised within political ecology with studies limiting themselves to describing their history, spatial distribution and accessibility, use patterns, user perceptions and benefits (Byrne and Wolch, 2009). More recent research has started to question how and why specific nature-culture assemblages like conservation areas are

produced as well as the ideologies that surround them (Castree, 2003; Byrne and Wolch, 2009). Conservation areas have served to exclude potential local resource users through ‘fences and fines’. More importantly, from a political ecology perspective, it is the powerful extension of conservation discourse to places, peoples and landscapes that are not confined to remote sites or perceived 'wilderness’ (Castree, 2003). This started with the colonial government that created landscapes of conservation and tourism, displacing indigenous people in the process. In this process, the state produced and controlled people-nature discourses (McGregory, 2010). The current political and economic crises in Zimbabwe has created ideological conflict as the state pushes for nature conservation on one hand, and the indigenisation of resources on the other, weakening the inherited model of conservation in the process (Wolmer, *et al.,* 2004; McGregory, 2010). Evidence collected from the Nyamakate households shows a changing relationship between local people in the area and game as a resource. In the past, people benefitted from the game by getting meat rations when a hunter or rangers killed an animal, but currently they no longer do, and hence resort to poaching.

The fourth material resource used by the Nyamakate community is water (Figure 8.1). This is discussed in depth in the following section. Water use can be categorised into two types, namely, productive and domestic use. Evidence shows that the dominant productive uses of water amongst the households are: brick moulding and the watering of animals, gardens, tobacco nurseries, and fields. Water drawn from the river and rainfall are the dominant sources of the water used for productive purposes (Interview 53, 07/12/2011).

Water is also important for domestic use and is drawn from rivers, boreholes and wells. Each village has an established water source, however, these vary from protected sources to unprotected sources (Figure 8.2, 8.3 and 8.4). It was observed that villages in the lowland have access to more protected water sources (Figure 8.2). The unprotected water sources include: deep wells, shallow wells and dug out holes on the river bed (See Plate 8.4 for a well on the river bed). The interviewed participants indicated the following as the main domestic uses of water: laundry, washing dishes, cleaning toilets and houses, bathing, cooking and drinking. All the participants reported that women and young children fetch water for domestic uses. Men help to fetch water for domestic use when the women are ill or the water point is far away from the homestead.

This section has presented the range of uses of the different resource units by the Nyamakate community. Water is scarce, as are other resource units and characterised by contestations over access. Since the focus in this thesis is to understand experiences of water scarcity and variability, the next section will focus in more detail the relationship between people and water resources.

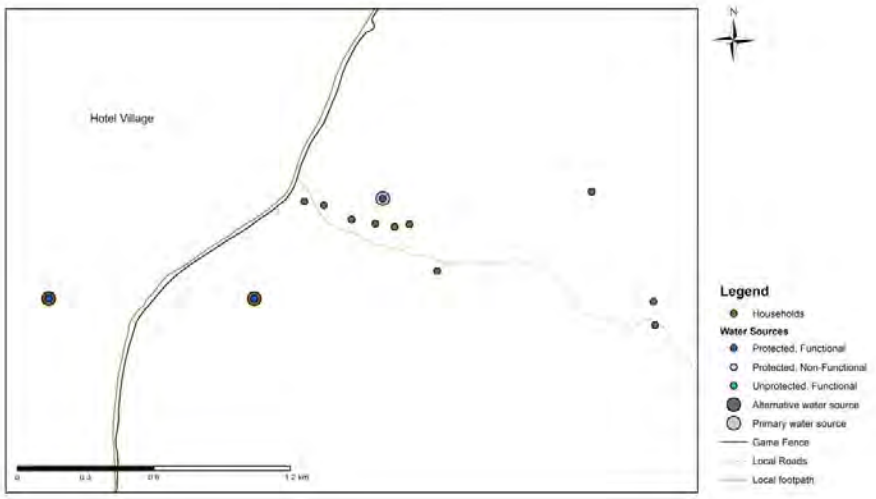


Figure 8.2 Hotel Village interviewed households and water sources.

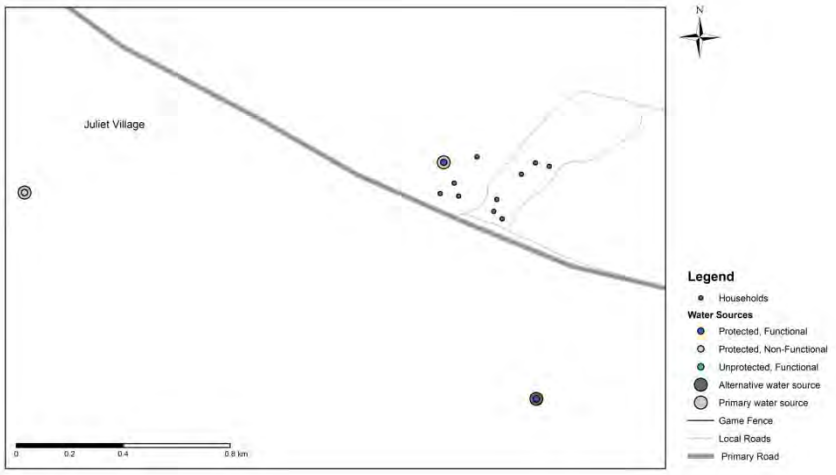


Figure 8.3 Juliet Village interviewed households and water sources.

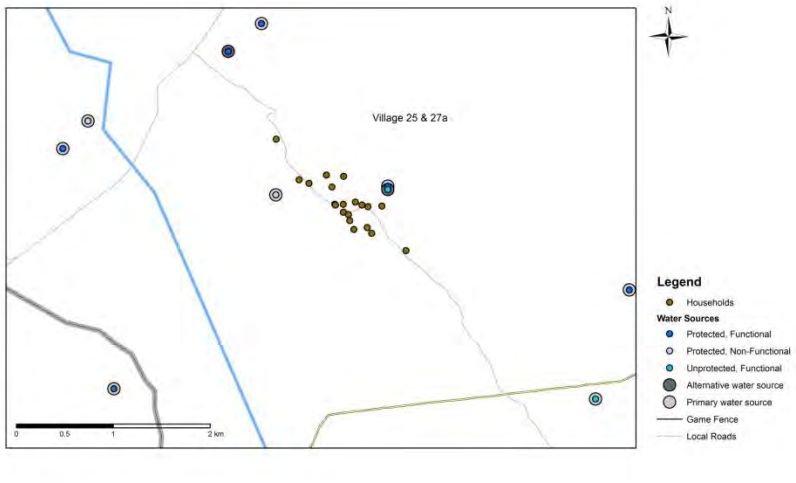


Figure 8.4 Villages 25 and 27a interviewed households and water sources.

All four villages from which study participants were sampled had boreholes *in situ* (Figures 8.2, 8.3 and 8.4). Figures 8.2, 8.3 and 8.4 show the location of households in relation to their water sources. Households in the lowland (closer to the main road) have all boreholes functioning and in the case of breakdown their alternative water sources are closer to these alternative sources than those of the households in the upland area (Figures 8.2 and 8.3). The households in the upland area have two boreholes which function seasonally. One of the Borehole Committee members from village 25 stated that the problem with their borehole is the shortage of pipes, hence when the water table becomes lower, the borehole does not produce water (Interview 1, 12/09/2011). As presented in Chapter Seven, accounts from Village 27a households demonstrate that their borehole produces a reliable source of water during the rainy season, but for most part of the year it is dry. People from Villages 25 and 27a have to travel a long distance to their alternative protected water source in Village 24a (Figure 8.4)

8.3 Access to Water Resources

The provision of clean portable water is one of the millennium development goals (MDG). About 89% of the world's population is using improved water sources (WHO, 2012). Although most countries in Africa have moved closer to achieving the MDG targets, even

though Zimbabwe had between 5% and 10% expansion of improved water sources, this was not sufficient progress to meet the MDG target (WHO, 2012). The Nyamakate community fetch water from a number of water sources that include: borehole, protected wells, unprotected deep wells, shallow wells and river bed shallow wells. Out of the water sources used by the Nyamakate community, boreholes and protected deep wells provide safe drinking water. Boreholes and protected deep wells are the primary water sources and others are used as options when desperate.

Much scholarly interest has arisen around the subject of access to natural resources, especially water, due to its scarcity and importance for life (Scoones and Cousins, 1991; Nemarundwe and Kozanayi, 2003). Institutional arrangements are very important in determining access to water resources since they guide who has access to water, at what time and volume, and who manages the resource (Nemarundwe and Kozanayi, 2003). All participants from the community agreed that everyone should have access and usufruct rights to water resources within Nyamakate area. The 'open access' to water resources is said to be informed and guided by Shona customs (Interview 45, 23/08/2011). The following statements from interviews demonstrate the open access to water resources.

> We are taught by our parents that one cannot be denied water … if you do not have food and you get a visitor or passer-by - give them water (Interview 46, 16/09/2011).

> We do not choose who gets water - even a mentally ill or sane [person]; poor or rich; one who does not respect tradition and one who does, all have equal access to water. In Shona we say let the insane get water and food so that when we try him at the local court he is full (Interview 47, 24/08/2011).

Such conceptualisations of water as illustrated above have been critiqued as they present a narrow definition of access to water as water for drinking, cooking purposes and basic health only (Makoni, *et al.,* 2004). This traditional conceptualisation of water has been extended to understand water as an economic good and essential for productive purposes (Makoni, *et al.,* 2004; Katsi, *et al.,* 2007). In view of the expansion of the conceptualisation of water resources, it is necessary to interrogate the issue of access in a broader context.

The participants from the community differentiated between access rights to water sources free from human modification or mechanisation, and those water sources that have been subjected to human modification. The former refers to water sources such as rivers, streams, vleis[64] and natural springs, while the latter refers to water sources such as boreholes and wells. It is an accepted norm in the Nyamakate community that water sources which are free from human modifications are open to be accessed by everyone. Access to these water sources was free of charge and loosely controlled. The water resource that is not modified is not strictly managed and the rules governing its use are not strictly applied. In some cases, even the managers of these resources are not known (FGI 8, 09/12/2011). Interviewed community members could not specifically identify who regulates access to unmodified water sources. Some of the responses to the question on who controls access to water resources included: the government of Zimbabwe, Environmental Management Agency (EMA), the local councillor, the Rural District Council, and the Ministry of Health and Child Welfare. Thus local people saw some higher authority as the regulator and not a local person within the community. It is not an unusual phenomenon to have multiple stakeholders involved in the management or regulation of the same resources units (Sithole, 1999; Nemarundwe and Kozanayi, 2003; Mbereko, *et al.* 2007).

More than half of the interviewed household representatives were not aware of any traditional or formal rules which regulate access and use of water resources in the area. An old man from Charlie Village said, that the existing laws aim to conserve natural resources like trees, soil and wild animals but not water resources (Interview 43, 22/06/2011). This means that he (participant) is unaware of any national laws. The key community informants interviewed tended to place an emphasis on the traditional rules which regulated water resource utilisation in the past. The participants identified five rules that are observed when accessing and using water sources (Table 8.1). The traditional regulations that govern access to water resources have been weakened and people do not follow them religiously as in the past. *De jure* laws of governing water resource access and were not mentioned by the participants. However, the *de facto* rules guiding access to water resources are constantly being negotiated amongst the resource users and hence change over time (Nemarundwe and Kozanayi, 2003).

[64] Vleis is an Afrikaans word that refers to a type of wetland that is usually a valley bottom or depression that forms natural drainage systems with or without a developed and distinct stream (Mharapara, 1998).

Table 8.1 Rules that govern access to water resources in Nyamakate

	Traditional Rules
1	Rain making ceremonies to be held before every rainy season.
2	Instruments and gadgets used on fire are not to be put into water sources.
3	Ceremonies are held to ask the spirits to protect a water source/point whenever a new water source is established or when it dries up in an unusual way.
4	Soap or anything with perfume is not to be put directly into a water source such as a river/stream.
5	Woman cannot go and bath or stand over a water source during their menstrual periods.

Out of these five rules, the fifth restricts women to access open water sources when they are menstruating. This customary rule was said to protect the water source from contamination from the blood. Participants to an FGI did indicate that some of these old laws were no longer being enforced. One woman said, "If you not go to fetch water who will go for you, that was practiced then, now we have pads". This demonstrates the challenging of the patriarchal customary practices that suppress woman. Gender theorists attack such patriarchal customary rules as creating inequality by rendering men more powerful over women (Yamano, *et al.,* 2002; Yamano and Jayne, 2004; Mutangadura, 2005). Interviews with the key community informants, dominantly old men, revealed that they blame the water scarcity and variability on the abandoning of such practices by the new generations.

The Nyamakate area has 40 villages and each one has a *de facto* Borehole Committee tasked with managing domestic water sources[65]. All the household heads that participated in the interviews highlighted that access and use of village boreholes was regulated by the Borehole Committees which are nominated by the villagers. Both household and focus group interview participants highlighted that the Borehole Committees had the power to define who accesses and uses the borehole (Interview 53, 07/12/2011). The Borehole Committees regulates the amount of water to be fetched by each household, and when they can do so. The household heads from Village 25 reported that the Borehole Committee stipulated that every household could only fetch two 20-litre buckets per day because the borehole has a small quantity of water. The borehole from Villages 25 and 27a are seasonally dry and people resort to using

[65] At the time of the study some of the boreholes were not working but Borehole Committees were emplaced. If the borehole is not working, the Borehole Committee negotiates on behalf of their village with neighboring committees or they mobilise people to fix their village borehole.

the borehole from Village 24a (see Figure 8.4, Village 24 boreholes are marked alternative water sources for Villages 25 and 27a). The Borehole Committee in Village 24a, however, stipulated that people from other villages could together only draw a maximum of six 20 litre buckets per day[66]. This rule is applied in order that there will be enough water remaining for household in Village 24a to access water. Furthermore, the villagers here had to access the borehole for fetching water in the mornings only. One participant from Village 24 asserted that,

> Our borehole is one of those old ones [constructed during the time of Freedom from Hunger Campaign] and it always has water. We help people from other villages, but as you know this is public property and if we do not manage it we will also end up without water. We regulate the amount of water to be extracted by people from other villages and the duration the borehole can pump water (Interview 43, 22/06/2011).

Evidence shows that there are some discrepancies apparent regarding the amount of water fetched per household in villages with water scarcity. For example, Household 1 in Village 25 stated that they fetched up to six buckets per day for the family while the Borehole Committee stipulates two per day per homestead. The household head is a member of the village Borehole Committee. Upon probing as to why their household gets more water than others, the woman said,

> They consider the homestead and not the number of people who live within the homestead. Even if you are hundred or two [people] at a homestead you still get two buckets. If there are two women [these are considered as two homestead because they usually cook differently] within one homestead every women gets two buckets. For example, in our case we have a daughter-in-law within the homestead. She is entitled to two buckets every day because she has her homestead [an undeveloped homestead close to the participant's homestead] despite that she is part of this household. Our homestead is composed of three stands so we get six buckets every day. But, if my daughter in-law did not have a stand she would not be entitled to any allocation (Interview 1, 12/09/2011).

[66] The borehole in Village 24a was the most productive in the highland at the time of the study (June-December, 2011). People from the four surrounding villages were coming to fetch water from the Village 24a borehole.

The Borehole Committees regulated the amount of water to be fetched depending on the available water, which is also dependent on the season. During the rainy season, the restrictions on the amount of water to be drawn are relaxed. A number of the households interviewed indicated that during the rainy season they could fetch as much water as they desired. However, one of the Village 25 Borehole Committee members indicated that restrictions on the amount of water that could be harvested were still being enforced at the time of the study. I had the following conversation with her:

> *Participant*: During rainy season, the borehole is not locked and anyone can get as much water.
>
> *Researcher*: What if I want to collect 10 drums of water?
>
> *Participant*: The committee will not allow you because you will destroy the borehole. The borehole cylinder will be damaged. Even a drum is too much. The borehole will heat up and break if it is pumped for too long. (Interview 15, 27/09/2011)

Another factor that compromised the access and use of borehole water was the breaking down of boreholes. This is a common occurrence in rural Zimbabwe especially within the past 15 years due to lack of spare parts (Nemarundwe and Kozanayi, 2003). Out of the 23 villages visited by the researcher, only 14 boreholes are functional. Thus, in this case water scarcity is being caused by lack of infrastructure rather than by the physical absence of water. This is a common trend in sub-Saharan Africa where governments are failing to provide services (WHO)[67]. In the villages where the boreholes are non-functional, the access to safe drinking water was compromised as people then resort to using unprotected sources.

To maintain the boreholes, households pay a levy. All the participants in the community highlighted that households are called upon by the Borehole Committee to contribute money for the procurement of spares, transportation costs and the repair of the boreholes. The researcher encountered one case from Village 27 in which a household was denied access to the borehole as they were in arrears with their contribution to repair costs. One of the Borehole Committee members of village 27a said:

[67] http://www.who.int/features/factfiles/water/water_facts/en/index.html [Accessed 20/11/2011].

> There are other people who refuse to pay money for the borehole repairs … but that person goes to drink beer at the township or if it is a woman, she buys clothes or other things that require even more money for leisure. Those we deny water until they pay (Interview 8, 19/09/2011).

Makwerere and Mandoga (2012) report that people who do not pay for the maintenance of the boreholes are often labelled as being as anti-development and are mostly likely to be aligned to opposition politics. In Zimbabwean rural areas, this can result in the person being victimised or subjected to violent attacks especially during or close to election time (Makwerere and Mandoga, 2012). The following statement shows the suspicion that those who do not contribute to borehole repair costs are subject to:

> We are actually afraid and on the lookout for such deviant people they can poison the borehole. The kind of heart that they have that prevents them from cooperating with everyone means that they do not value other people's lives (Interview 8, 19/09/2011).

The paying of maintenance costs results in the need to limit access to people from other villages. It emerged that people from Villages 24b, 25, 27a to 27b contribute towards the maintenance of Village 24a's borehole since households from these villages fetch water from there when their boreholes breakdown. This means that people from these villages without water have to pay for maintenance costs for the two boreholes (the borehole from their village and the Village 24a borehole). One participant from Village 25 stated,

> At times, Village 24a Borehole Committee calls upon everyone to pay money as contributions towards the maintenance of the borehole. We also have to pay the money because we also utilise their borehole. When they need labour to repair or maintain the borehole we [people from Village 24b, 25, 27a and 27b] also offer labour for the work to be done. We contribute towards the maintenance of the borehole in Village 24 so that when we fetch water no one complains from that village (Interview 1, 12/09/2011).

Participants of the FGIs highlight that there are some villages which are limiting access to their boreholes to people from neighbouring villages. The reasons for limiting access include, the low water table, fear of breakdowns, and people from other villages not paying maintenance costs. A woman from India Village said,

> … we have a problem in getting an alternative water source. If our borehole has a breakdown or a problem we usually go to fetch water for one or two days at the Sierra Village borehole but beyond a few days the people in Sierra lock their borehole (FGI 1, 24/11/2011).

The ability to access and utilise water sources was also compromised by people who dug boreholes and wells using their personal resources. Two out of the 14 boreholes in the study area are privately owned. It is widely accepted that if someone develops their well or borehole they have the right to limit access to the water source (FGI 1-8). Most of the people who had private wells and boreholes indicated that they do allow people from the community to fetch water from their boreholes and wells. The woman who's well supplied water to Chally Village said,

> Everyone can fetch water. I am the one who paid people to dig the well. I meant it to be for my garden. So I just allowed people to fetch from there because water is not denied to anyone ... I do not have anyone whom I hate to the extent of denying them water (FGI 3, 26/11/2011).

However, being denied access to the privately dug boreholes and wells was experienced by some people, as they can be denied access to water by the owners of the well (FGI 6, 08/12/2011). The major reason identified for a household being denied water is the lack of good relations between the people. In addition, one of the well owners from Charlie Village said too many people using the well will result in unhygienic conditions around the well (FGI 3, 26/11/2011). It was reported that someone had constructed a borehole, close to the Nyamakate shopping centre; although he allows people to fetch water from his borehole he has to be there to monitor how it is being used (FGI 3, 26/11/2011).

The researcher observed that there are two major strategies used to limit access and the public use of private boreholes, namely; the removal of the overhead shaft (Plate 8.1), and the locking of the borehole (Plate 8.2). Plate 8.1 shows that the owner of the borehole has removed the overhead shaft. This is done every time after his household members and acquaintances have fetched water. There is limited access to this water source as the 'owner'

only notifies the people who are close to him when the head shaft will be fitted and then removed (Interview 51, 05/12/2011).

In all 40 households in the study area, the females are responsible for fetching water and do so by carrying the water on their heads in plastic 20 litre containers. Gender scholars adopting a political ecology approach argue that women are more in contact with water resource than men, and this has led to the feminisation of environmental responsibility due to the role of women in fetching water (Reed and Christie, 2009; Sultana, 2011). In exceptional cases men also go to fetch water. As explained by a middle aged man from Village 25,

> Mostly bachelors, widowers and boys fetch water from the borehole. But it is not a good place to be found at the borehole. There will be too many women doing their gossiping and storytelling. So normally, if you are a man you would just quickly fetch water and come back (FGI 4, 01/12/2011).

In the focus group interviews, women stated that they scorned men who come to the borehole since they view it as their place to talk and meet with friends (FGI 1, 2, 3, 5 and 7). It was also noted that even boys who are looking for girls to court will come to wait for them on the route to the water point. This seeking out adds another dimension to the dominant gender

Plate 8.1 Borehole with the head removed (*Source*: Mbereko Alexio 2011).

Plate 8.2 Borehole under key and lock (*Source*: Mbereko Alexio, 2011).

discourse that proposes that the fetching of water by women is a form of injustice. The interviewed women argue that this is their social space which is viewed by them as a positive experience in their daily lives (Makoni, *et al.,* 2004; Katsi, *et al.,* 2007; Reeds and Christie, 2009; Porsani, 2010). Such studies have predominantly used a quantitative methodology which fail to interrogate the social actor's world views and understandings and for this reason do not report on the patterns of meaning in these views.

Three-quarters (n= 20) of the participants from Villages 25-27 report that males also go to fetch water. This practice could be explained by the reversal in gender roles that occur due to water scarcity and variability. Men only fetch water if the water is at a distance or if their wives are sick and there is no one else within the household to undertake this chore. Males usually go to fetch water using a scotch cart or wheel barrow (Interviews 2, 3, 4, 5, 10, 15,

19, 20). Male presence at the water point is acceptable by both sexes. Males can acceptably go to the borehole when they are repairing the borehole. Other studies in Zimbabwe have also reported these findings (Manase, *et al.,* 2003; Nemarundwe and Kozanayi, 2003; Makoni, *et al.,* 2004). The women consider the water points their spaces to discuss and interact with one another outside of male interference (Makoni, *et al.,* 2004).

There are mixed views amongst villagers about the role of the adjacent game park in limiting access to water resources. All the participants from Nyamakate community are aware of the game park and that it is illegal to harvest any natural resources from within the protected area. Some participants view the game park as a source of water, and those at a distance from the park indicated that the distance from the game park compromised their ability to benefit from water sources within the park. One participant from Village 27a said,

> … those who are close to the game fence at times go to fetch water from the park. But for us it is far away, so much that if you take a bucket you will finish drinking the water on your way back because of the walking distance. You will sweat until you dehydrate (Interview 8, 09/12/2011).

Besides the issue of distance to the game park, other participants raised a number of reasons why they cannot access the water resource in the park. Two respondents provided the following reasons:

> We do not even want to use the water within the game fence because it is for the animals. Even if we were to be allowed to fetch it I think it is better left for the animals (Interview 1, 12/09/2011).

> I think it is okay with me not to allow access to the game park to fetch water or do anything. You can encounter lions at water points in the game area and they can attack and kill people (Interview 27, 17/10/2011).

Further reasons for avoiding access to water resources in the game reserve are that the game scouts could catch and beat them. Participants from Hotel Village, which is situated closest to the game fence, reported that they did access water from Water-Point 15 within the park

(Interview 23, 14/10/2011) (see Figure 7.2). The following quotations testify to this illegal activity:

> Our old borehole used to have a lot of breakdowns and women had to walk to fetch water from India Village. Women started going to Water-Point 15 within the National Park to fetch water because it was closer than India Village. The scouts who stayed at Water-Point 15 camp used to deny us water and chase people away with sticks. Young women who could run and tolerate the abuse by the game officers continued to sneak in and fetch water from the game park. Older women like me, fetched water from India Village until this borehole [the hotel Village borehole] was erected (Interview 21, 14/10/2011).

> Not at the moment, but long time ago, we used to bath and do laundry in the rivers within the National Parks. We did not fetch water to bring home … (Interview 22, 14/10/2011).

> I am even afraid of going there if the game scouts see you there they will beat you up. In the game fence it is scary. But as a last resort people at times go there to fetch water or look for firewood or poles (Interview 27, 17/10/2011)

Four out of the 10 study participants from Hotel Village owned up that their cattle crossed over through the game fence for pasture and water but none of them acknowledged herding or driving them into the game park. One of the villagers said, It is the mischief of the cattle and should not be blamed on the cattle owners" (Interview 30, 22/10/2011). The researcher observed at a distance that there were cattle within the game area fence with young boys herding them (Observation: 16/10/2011). The researcher had the following conversation with a householder from Hotel Village:

> *Researcher*: Do you access water resources in the adjacent National Parks area?

> *Participant*: Our cattle are the ones that go to water and graze in the game area. We do not deliberately drive our cattle into the game park, we just open the kraal[68] [at the homestead] and leave the cattle to roam around. They always go to the park on their own initiative. So at the end of the day we just go and collect them.

> *Researcher*: Is this use legal or illegal?

[68] A kraal is defined as a cattle enclosure.

> *Participant*: It is illegal to cross the game fence. The rule is if your cattle cross into the game fence you must go to Marongora [about 25Km] National Parks and Wildlife Management offices and get permission to go into the game area to collect your cattle. It is practically impossible to use so much money on transport. We just go and get our cattle (Interview 25, 16/10/2011).

This section has presented the experiences of households in accessing water resources. Villages in the highland area (Villages 24b, 25, 27a and 27b) are challenged by water scarcity. The highland water sources are seasonal, and hence are unable to supply water to the community. The households are not aware of *de jure* laws governing access and utilisation of water resource but are aware of *de facto* rules that governed water resources. Thus, access to water resources in the Nyamakate area is prescribed by *de facto* institutions, namely customary rules in the past and the rules of the Borehole Committee at present. In the lowland, the quantities of water that can be pumped from the water points are not restricted unlike in the highland where households are rationed to 40 litres per household.

8.4 Changes in Water Resources

This section presents the findings in relation to the changes in water resources, with the evidence showing that water resources are declining. Earlier literature from ecology and biology blame the decline in the quantity and quality of water resources on human activities, which result in either siltation from erosion, or pollution, which results in the eutrophication of water bodies (Rapp, 1975; El-Swaif, *et al.*, 1982; Lahlou 1996; Lal, 1995, 2001). More recent literature on the decline in water resources attributes the depletion rather to climate change (Makadho, 1996; Gbetibouo and Ringler, 2009; O'Brien and Leichenko, 2009; Magadza, 2010). Natural science literature conceptualises the phenomenon of water scarcity as a linear progression of cause and effect, hence the focus is on finding appropriate social tools to deal with the causes (Ohisson, 2000). However, water scarcity can also be conceptualised as being not linear, but rather occurring in a spiral movement, oscillating between a perceived scarcity of the natural water resource, and a socially constructed scarcity in order to overcome the original scarcity, all the while progressing towards an ever increased application of social resources to overcome the natural resource scarcity (Ohisson, 2000).

This section will use post-structural political ecology framework to demonstrate how water scarcity in the Nyamakate area is both naturally and socially constructed.

From a political ecology perspective the decline in water resources is viewed as a product of social and ecological systems rather than purely physical processes. For example, Blaikie and Brookfield (1987) argue that the marginalisation of the rural poor forced them to degrade natural resources, which includes water. More recently, post-structuralist political ecology argues that the vulnerability of the ecology and society is a result of the influence of social and political systems (Few, 2003; Blaikie, 2008; Collins, 2008, McLaughlin and Dietz, 2008). Post-structural political ecologists conceptualise water resource decline through an understanding of the agency of poor rural people and their world views as well as the institutional influences affecting their resource use patterns and the resilience of the ecosystems (Aggarwal, 2006; McLaughlin and Dietz, 2008). Thus, construction of knowledge and understanding of the water situation by local people is shaped by the social institutions that propagate environmental discourses and policies which inform the interaction of Nyamakate community and the changing water resources.

There is a consensus among all the community members interviewed that the water resource within Nyamakate are declining in quantity and increasing in quality. Two sub-themes are evident within this theme, namely: perceptions of increasing water quality and perceptions of decreasing water quality. Those who highlighted that the quality of drinking water had improved after 1980 noted that this was due to the increase in the number of boreholes. Some of the old boreholes were sunk by the white government before 1980. Plate 8.3 shows one of these early boreholes that has been neglected because of bad water quality. An old man from Village 25 said that when resettlement took place,

> We found boreholes here, but the water was dirty [The boreholes had rusted from not being used plus some of them were poorly constructed and muddy water was therefore extracted]. The boreholes had been drilled during the colonial era. I am not sure who drilled them … We used to get most of our water from the water ways and rivers (Interview 8, 27/08/2011).

The quotation refers to the boreholes that existed in the Nyamakate settlement area in the 1980s. Participants of an FGI in Sierra Village noted that some of these old boreholes,

besides producing bad quality water, were difficult to pump, “one can pump for five minutes before water comes out” (FGI 2, 24/11/2011).

The District Development Fund replaced some of the old boreholes with newer models of pumps in the 1980s. The replacement of a borehole depended on the nature of the substrate, and the quality and quantity of the water being pumped (Interview 43, 47 and 53). A number of household interviews, especially from the upland Nyamakate area, stated that the water quality is improving from the past times in their area. This was attributed to an increasing number of boreholes and the installation of modern-model boreholes, and the fact that they had been sunk into a rock substrate (Interviews 1, 10 and 25).

On the other hand, many households reported declining water quality. Currently, a number of boreholes are reported to be producing reddish dirty water which is characterised by odours, due to the presence of decaying leaves. Examples of these include the boreholes in Hotel, India and Village 27a. It was noted that, “At times reddish water comes out of the borehole especially when you start pumping in the morning, but it will clear with time” (Interview 12, 23/09/2011). Evidence from interviews and observations confirmed that the concrete casing of some of the boreholes is broken which then allows litter into the borehole. Boreholes that

Plate 8.3: A non-functional and abandoned colonial era borehole (*Source*: Mbereko Alexio).

occasionally run out of water would pump up mud when they refilled hence the reddish water colour. In some cases, the reddish colour resulted from rust from the ageing pipes. These observations and accounts are summarised in the following quotation:

> Yes, the quality is changing these days. The water is dirty - I think it is because the dirt is not getting enough time to settle at the bottom of the borehole. People will just fetch it hoping that it will settle in the bucket at home (Interview 16, 28/09/2011).

The eutrophication of rivers within the Zambezi Valley has been documented as the cause of a reduction in available water for domestic and productive uses, resulting in water scarcity and variability; participants also perceive water quality within rivers and streams to be of poorer quality currently than in the early 1980s (Mhlanga, *et al.,* 2006; Chakona, *et al.,* 2009). A number of participants mentioned fertilisers, soap and fuels as the major causes of deteriorating water quality in their rivers. The quotations below demonstrates the opinions prevalent in Nyamakate.

> … the water quality is different because people now are gardening along the river courses. The water they use for watering is returning into the river system. So the water these days is turning whitish instead of a blue-green colour (Interview 2, 16/06/2011).

> The water quality in rivers and streams has changed - long ago the water was of higher quality. The water was good because it was safe to drink, it was not itchy, it could clean our laundry very well, our crops would grow within a short time due to the water quality, but in our days the water does not achieve these things (Interview 3, 13/09/2011).

There is a consensus across all interviews that the amount of water resources has decreased (FGI 1-8; Interviews 1-53). The water resources include rainfall, underground water and surface flow. All the participants observed changes in the rainfall including the onset time and the decrease in volume. Although the exact day of the onset of the first rainfall in summer in the past differed according to the range of participants, this date was cited to be somewhere around the middle of October. Accounts from participants suggest that the first rains in the past few years have occurred towards the end of November up to the middle of December (Interviews 40-53). I observed that the rains in the 2011-2012 season only started on 17 December 2011. One participant, whose view was shared by a number of other people,

said, “The amount of rainfall has reduced significantly and the season these days only lasts for three months” (Interview 43, 22/06/2011).

All the key community informants concurred that the Nyamakate area had a lot more ground water in the past than is the case currently. The following quotes depict the experiences of the community in the early 1980s when they were resettled in the area:

> One could just dig anywhere and find water. Mostly, you could get underground water at a depth of about three metres. The ground water levels are now low. Now we dig wells that are deeper than 15 metres to get water (Interview 1, 13/06/2011).

> There was a lot of water in this area even across the road we could get water from a spring throughout the year. [In] the time we have been talking here a child would have returned with water from the spring (Interview 9, 30/08/2011).

> The borehole is failing to service the village people. These days the borehole can dry up before everyone gets water for their household (Interview 11, 22/09/2011).

Two types of surface water exist in the Nyamakate area, namely the rivers and vleis. All the participants indicated that rivers are now becoming drier than in the past (FGI 1-8; Interviews 1-53). The two major rivers, the Rukomeshi and the Nyamakate, are now only flowing during the rainy season. Yet in the past, these rivers used to flow throughout the year. The following statements reveal the current state of the two main rivers,

> Yes, in the 1980s it [the Rukomeshi] used to hold meaningful amounts of water but currently it only has water after rains and all the water drains away quickly (Interview 6, 16/09/2011).

> Rukomeshi River is dry - there is no water. Yet in the past we used to rely on the river. We never used to queue for water in the past (Interview 13, 23/09/2011).

> Last year the Rukomeshi River never flooded its bank as it normally does. The water never covered the bridge. Throughout the rainy season, except for few days, people were crossing the Rukomeshi River across the channel [a shortcut that does not pass over the bridge] (Interview 7, 19/09/2011).

> When we started staying in Nyamakate, water used to flow in rivers and vleis for most of the year. This vlei used to have a lot of overland flow but now this is where we are seated talking (FGI 2, 24/11/2011).

Participants highlight the disappearance of fauna and flora in the river systems and wetlands as an indicator of changes in the water quantity (FGI 1, 2, 3, 8). Animals such as crocodiles (*Crocodylus niloticus*) and hippopotamus (*Hippopotamus amphibius*) have disappeared from the Rukomeshi and Nyamakate Rivers. Most of the riverine fish species (such as bream) are no longer found in the rivers, with the exception of catfish (*Clarias gariepinus* Burchell). One participant from Village 25 said,

> Long ago we used to have ponds along Rukomeshi where we used to fish from but within the past 15 to 16 years these have disappeared. There used to be a pond called Chengwena (belonging to crocodiles) because crocodiles used to infest the pond. Although the name stands today the crocodiles have migrated into the game area where the rivers still hold water. Now the ponds are reduced in size (Interview 4, 14/09/2011).

The reasons for water scarcity provided by the participants can be classified into three themes namely: spiritual and cultural, human impact and climate change (Table 8.2).

Table 8.2 Reasons for water scarcity.

Reason for water scarcity		*Category and number of interviews in which the reason for water scarcity is stated.*			
		Household	Key Community Informant	Focus Group	Total Number
1	Climate change has caused the decline in rainfall	25	1	7	33
2	People have abandoned the Shona tradition of rain making and sanctifying of water points	5	10	2	17
3	The mechanical faults in boreholes	11	1	4	15
4	Erosion and siltation	6	2	3	11
5	It is the droughts	3	1	2	6
6	It is God's time to cause water shortage			3	3
7	Population pressure			2	2
8	Livestock stampedes in the wetlands		1		1
9	Deforestation		1		1

All the key community informant interview participants blamed the declining rainfall on the people who abandoned their traditional beliefs and practices. Seven of the ten key community informants indicated that their parents, or they, had in the past taken part in rain making ceremonies or the sanctification of the water sources. They are of the belief that the success of these ceremonies is in bringing abundant rainfall. One old man from November Village said,

> … my grandchild. For me, I started being a medium in 1948 and learnt about the history of our ancestors. I witnessed traditional ceremonies yield rainfall in Hurungwe. But, one who never witnessed these things would say I am lying. I told… [them] I was going to ask for water on behalf of the village. But they did not believe me because there had been brought up in the [commercial] farms. Below the borehole there was a muvanga tree. I went to the tree and performed the traditional rituals asking for water to flow. It rained afterwards and water filled the stream and drained all the way to Nyachimwe River [a river outside November Village that drains into the Vuti] (Interview 42, 16/06/2011).

The pursuit of modernity, the growing belief in Christianity, leadership's ignoring of tradition and the mixture of peoples of different cultures are all blamed for eroding the performance of traditional water ceremonies by the aged people (Interviews 42, 44, 45, 46, 47 and 48). The rain making ceremonies are said not to be possible under the current struggles for Chieftainship since Chief Chundu is ruling the Nyamakate area but his spirit mediums are not the rain makers of the area (Interview 41, 13/06/2011).

None of the respondents convincingly disputed the effectiveness of the traditional ceremonies. However, the viewpoints that directly counters the belief in traditional ceremonies came from those who argued that it was God's will that caused water scarcity in the area. This issue sparked heated debates, especially in focus group discussions 2, 3 and 4. The following quotations present some of the conversation:

> *Old women*: We have just been arguing … maybe I do not worship God as much as you do. So what is causing the water scarcity?

> *Apostolic women:* Mapiye awanda (there are too many sins in the area) … Cousins are having sex and marrying, a mother in-law in our area was impregnated by a son-in-law (FGI 3, 22/06/2011).

When the issue of the role of the ancestors' spirits in water scarcity was debated, a middle aged man intervened into the debate and said,

> I think you are just lying to one another, God is there yes, and the spirits that ask for rainfall from God are also there. We are not saying spirits are not there, they are there, but when the spirit is called it will tell you that I am going to intercede for you and ask for one calabash of water (rainfall) from God the creator. So if God gives the spirits the calabash then the spirits will give us rainfall. … Let me help you there, we have just received our first rains yesterday, people from churches and spirit mediums were asking for rains since October but it was not raining, that is why we are saying it is God's will to reduce the amount of rainfall we are receiving.

The debate was taken to level higher as participants compared the Nyamakate scenario with other neighbouring areas that used to be occupied by white farmers before the land invasions of 2000. Middle aged people are of the opinion that white people who owned farms close to the Nyamakate area practiced cloud seeding that is why they used to receive higher rainfall than currently the case (FGI 4 and 7). On the other hand, two old men reported that the white people on the farms valued Shona rituals and provided resources to mediums to do their ceremonies (Interview 2 and 3).

The other theme that emerged from the interviews was climate change, and it was identified as a cause for declining water resources by more than half of the household interviews (Table 8.2). Thirty-three participants attributed the low rainfall and scarce ground water to the effects of changing climatic conditions. Decline in rainfall is said to have a bearing on the ground water levels and surface flow regimes (Mugabe, 2012). Although the discourse of climate change was identified by the young participants (Interviews 2, 12, 29 and others), those older referred to these changes as changing of the weather conditions (Interviews 22, 41, 43). Statements that point to general weather shifts without linking these directly to human activity or spirituality are classified here under the climate change theme. For

example: “I think everything that deals with weather is changing. The previous winter season was longer than the duration of a typical winter season” (FGI 4, 23/08/2011).

Siltation, failure of borehole infrastructure and increase in human activity are cited as other factors responsible for causing changes to the availability of water resources. Silt, mainly from the cultivated fields, was highlighted as the major contributor to river siltation (Interviews 1, 8, 6, 16 and 23). This view was captured in the following statement:

> I think the rivers are being destroyed by siltation. Similarly the Rukomeshi is also heavily silted. The whole area [of Nyamakate] has contours pegged but very few people have constructed them [to prevent erosion] (Interview 6, 24/08/2011).

This statement demonstrates that the two major rivers that flow through the Nyamakate area are heavily silted and are unable to hold water for use by the community.

Borehole break downs are indicated as another factor responsible for the domestic water shortage. As stated earlier, not all the boreholes visited by the researcher were functional. Some of the common problems cited by participants included: pipes being short (for example, the borehole in Village 25 was operating with three pipes instead of seven), breaking down of the cylinder heads, drying up of the borehole, and boreholes failing to meet demand. From the evidence above, it can be summarised that Nyamakate experiences water shortages that result from decreased rainfall and lack of infrastructure to tap underground water. Furthermore, there are many understandings within the Nyamakate community for the causes of water shortage. The coping strategies adopted by people are informed by the amount of water available and the on-going contestation amongst actors within the prevailing social systems.

8.5 Coping Strategies with Water Scarcity and Variability

Post-structuralist political ecologists have linked water scarcity debates with socio-political perspectives that engage with discourses and contestations around scarcity (Forsyth, 2003; Robbins, 2004; Minnegal and Dwyer, 2007; Mehta, 2011). The subject of water scarcity is a

complex phenomenon as demonstrated in the previous section since it is dependent on natural and socio-political factors. This section will discuss the coping strategies adopted by the households in order to cope with water scarcity. There is evidence in the literature that poor social actors respond to environmental perturbations in ways designed to maintain livelihood opportunities (Bryant and Bailey, 1997, Mehta, 2011). In examining such responses to water scarcity, Rugalema's (2000) critique of the definition of 'coping' in the cases of HIV and AIDS affected households will be adopted and applied it to the issue of water scarcity. As noted in Chapter Two, Rugalema (2000) argues that use of the concept of 'coping' is to assume that households are succeeding or managing to deal with perturbation, and ignores that in some cases they fail. The results of this study presented in this section demonstrate people's responses to water scarcity.

The evidence shows that responses to water scarcity and variability in the Nyamakate area differed from village to village. The responses are conditioned by the specific differences in quality and quantity of water available to each village. Generally, households tended to rely on the borehole from the next village as a coping strategy to water shortage in their own village (Table 8.3). For example, participants from Village 25 and 27 relied on using Village 24b borehole as a coping mechanism for their scarcity of water (See Figure 8.4). Another coping mechanism in response to water scarcity that was adopted by households was to rely on communal and private deep-wells. In order to address the water scarcity problems village members united and dug these deep wells. The water from wells would usually be used to supplement the water from their boreholes (Interview 52, 05/12/2011). However, in some cases the well is the only source of water in the village because of borehole breakdowns.

Table 8.3: Coping mechanisms to water scarcity and variability

	Coping mechanism	*Number of responses (n=40)*
1	Fetching water from borehole in neighbouring village	13
2	Digging of deep well	13
3	Use of shallow wells on the river	8
4	Waiting for the water level to rise in the borehole	4
5	Cutting down on other water uses	3
6	Fetching water early hours of the morning	2
7	Harvesting of rain water	2
8	Waiting for donors to drill or repair boreholes	2
9	No other option	2
10	Never experienced water shortage	1

The third coping strategy to water shortage is people's resorting to using shallow wells that are dug along the river bed (Table 8.3 and Plate 8.4). The shallow wells take a longtime to produce enough water to fill up a 20 litre bucket (Interview 3, 8, 10). On average it takes 45 minutes for the shallow well to have enough water to fill one 20 litre bucket. The researcher observed young children coming to fetch water from the shallow wells without adult supervision (15/06/2011). Some of them stood in the shallow well while filling their buckets. The other problem with the shallow wells was the threat of animals drinking from the same well as humans. According to one man from Village 25,

> For other uses like washing and bathing, normally people would go to Rukomeshi River and dig shallow wells. One has to wait for the water to fill up the shallow well before one can fetch the water. If one goes far away from the shallow well while it is filling up, goats and cattle would drink the water before one gets the chance to fetch the water. So when women go to the river they guard the shallow wells until they fill up and sediment before collecting the water. It takes about 45-60 minutes to fill up a bucket. (Interview 3, 13/09/2011)

Plate 8.4 Shallow well in a river bed which is relied upon for water when the boreholes are not functioning. *Source*: Mbereko Alexio, 2011.

The fourth coping strategy adopted by participants is to wait until the water level rises in the borehole. This is usually undertaken by villagers from the low lying areas because of their higher water tables than those in the highland. When too much water has been withdrawn from the borehole, the water level drops and the pipes fail to reach the water. A participant from Juliet Village said, "In the event of the borehole water level dropping beyond the reach of pipes, we wait for up to four hours and it will rise again" (Interview 30, 22/10/2011). Women go to fetch water in the early hours of the morning to secure adequate water supply. By the time the borehole has been used a lot and the water level drops, they would already have enough water for their households.

The other mechanism for coping with water scarcity is to limit water use within the household for certain uses only (Table 8.3). One participant summarised this idea by saying "We are just trying to make the best of the few buckets that we receive from the borehole" (Interview 11, 22/09/2011). This is done in two ways namely, water is reused, and other water uses, such as bathing would be precluded. For example, water that would have been used to wash dishes could be used to mop the floors. People also attempted to maximise on the limited water available by limiting water uses to those prioritised as important. A number of study participants who spoke about this coping mechanism mentioned that bathing was usually the first to be limited in order to save water. One woman explained how they manipulate the bathing arrangements so that they can maximise on the available water.

> It becomes very difficult to survive without adequate water. Now we are changing how we use water. We alternate bathing days. Someone who takes a bath today will not bath tomorrow. … The girls cannot afford not to bath, usually they take mini-baths from the well where we go during the night. (Interview 17, 28/09/2011)

Households confronted with water scarcity in the Nyamakate area adopt a number of responses in order to sustain their livelihoods. The responses adopted are crafted by the poor social actors without external support from either government or non-governmental institutions. Post-structuralist political ecology argues that the livelihoods of poor actors are linked to the powerful social actors such as the government and private and non-governmental institutions. However, in the case of Zimbabwe, theses linkages have fallen away due to the political and economic crisis (Blaikie and Brookfield, 1987; Bryant and Bailey, 1997). The poor social actors are therefore left to craft coping strategies that rely on

the natural environment. Evidence from the Nyamakate households demonstrates that the top seven out of ten coping strategies adopted are related to the environment: strategies which could lead to further water scarcity through depletion of the available water.

The setting up of Borehole Committees increases the bargaining power of the poor social actors in their engagement with higher institutions (Hurungwe Rural District Council), but this has not managed to resolve the water scarcity problem. Chapter Nine will expand on these institutional dynamics and power relations.

8.6 Conclusion

In the Nyamakate area there are four main natural resource units, namely: water, fauna, flora and soil. Chapter Eight presents a discussion of the set of natural resources units in the Nyamakate area and their uses. Access and use of all natural resources is more or less open to everyone. However, evidence shows that the natural resource base in the Nyamakate area is generally decreasing.

Cultural norms regulate the basic understanding that informs the regulation and management of water resources in the Nyamakate area. The Shona norms stipulate that no one should be denied water. However, this ideology is increasingly being threatened as young families are adopting liberal and modern ideals that promote individualism and competition rather than the sense of communal cooperation. A number of factors are highlighted as responsible for limiting access to water, such as: borehole breakdowns, dry rivers, decreasing and erratic rainfall, low ground water table, limited access to the game park, privatisation of boreholes and wells and the introduction of charging for the utilisation of community boreholes. All these obstacles to access water stem from the observation that water resources are no longer ubiquitous but highly localised and scarce. Generally, all the study participants agreed that water resources are changing from a state of abundance to one of scarcity. Numerous participants indicated natural processes that they use to interpret that water was scarcer, than when they first arrived in the Nyamakate area in the 1980s being: the current state of rainfall, ground water level and overland flow. On this basis, their accounts indicate declining water

quality and quantity. Study participants raised various reasons to explain water scarcity. These reasons can be summarised into three sub-themes: spiritual, direct human induced reasons, and natural changes in water resources - climate change.

The results of this study show that it is the women's role to fetch water for use within the household. A number of studies have documented the fetching of water as the women's responsibility (Makoni, *et al.,* 2004; Thangata *et al.,* 2007; Ansell, *et al.,* 2009, Gill, 2010). However, in the case of the Nyamakate community, men are also participating in the fetching of water. This gender role reversal can be explained by the water scarcity and variabity being experienced in the area. Alternative water sources are at a distance hence men must use animal drawn carts to fetch water from other villages.

The Nyamakate households' experience of water scarcity will be further interrogated in Chapter Nine in relation to the institutional framework and what this reality means to local people in the context of the HIV and AIDS pandemic. Households facing water scarcity implement a number of coping mechanisms, but some of them, like the river bed well, compromise future water supply as the bed becomes silted. This situation might exacerbate the experiences of HIV and AIDS affected households.

In conclusion, this chapter addresses two objectives which aim to demonstrate the lived realities of water scarcity and variability amongst the households in the Nyamakate resettlement area. The objectives being both to explore households' experiences, responses to, and interpretation of the impacts water resources depletion and scarcity on livelihoods, and social well-being, and also to explore and analyse changes in power relations that inform patterns of access and usufruct rights to water resources. Thus, Chapter Nine interrogates the relationship between HIV and AIDS and water scarcity and variability.

Chapter 9: Relationship between HIV and AIDS and Water scarcity

9.1 Introduction

Chapter Nine is the last of the four results chapters. Chapter Nine continues the argument from the preceding results (Chapters Six, Seven and Eight), which are contextualised within the background presented in Chapter Four. Chapter 9 presents the relationship between impacts of HIV and AIDS and water scarcity and variability in the Nyamakate community. The results presented in this chapter addresses objective six, which seeks to understand the relationship between HIV and AIDS and water scarcity and variability in the Zimbabwean context.

This thesis contends, that in order to understand the relationship between HIV and AIDS and water scarcity and variability, that this chapter reflects on the results presented in the three previous results chapters (Chapters Six to Eight). Chapter Six presents the households experiences, respond to, and interpretations the impacts of HIV and AIDS within the household and the community. This chapter reveals that HIV and AIDS are negatively impacting on the Nyamakate households and community in 12 distinct ways. The household experiences of HIV and AIDS impacts and coping strategies were determined by household structure, social networks and socio-economic status. Chapter Seven provides an understanding of how households experience, responses to, and interpretation of water scarcity and variability. Chapter Seven reveals that water scarcity and variability affects everyone amongst the Nyamakate households, but it is more severe in the upland as compared to the lowland. Chapter Eight argues that the context in which reality is created by actors is very important, hence the need to present the history and the institutional dynamics of the Nyamakate community. The chapter reveals that the Nyamakate community has minimal support from NGO and government, and this predisposes the households vulnerable to perturbations.

Chapter Nine will now draw on these chapters and present an understanding of the household's experiences and interpretation of the impacts of HIV and AIDS and water scarcity and variability. Section 9.2 presents the household experiences of the impacts of water scarcity on HIV and AIDS. Section 9.3 presents the experiences of HIV and AIDS affected households of water scarcity and variability. Finally, Section 9.4 presents the conclusion to the chapter.

Early political ecologists, Barnett and Blakie (1992) argue that HIV and AIDS is a disaster that presents long-wave shocks to the household and to the natural environment, and compromises agricultural productivity. In treating HIV and AIDS as a 'shock,' this approach obscures the agency of humans as social actors. HIV and AIDS presents localised and micro-level complexities in households, and in relation to the ecosystem, hence the concept of the 'shock' argument has to be extended to include the spatial and temporal variability of the pandemic (King, 2012). According to King (2012), the HIV and AIDS pandemic demonstrates the complexity and reciprocal relationship between the biophysical and socio-political dimensions of human health. Within a post-structural political ecology, HIV and AIDS are assumed to complicate the interaction between the natural environment and socio-political systems, furthermore, in this framework the analysis stretches from the global to the intra-household impacts of the pandemic. The following evidence is provided to examine the link between households and water variability at the local scale, and how this is influenced by the broader structural contexts within which the study area is embedded.

9.2 Impacts of Water Scarcity and Variability on HIV and AIDS Affected Households

This section argues that water scarcity and variability pose negative impacts to HIV and AIDS affected households in the Nyamakate area. As in other parts of rural Zimbabwe, the Nyamakate water resources are subject to government laws and policies as well as traditional rules. From 2000 to date, the Zimbabwean government has implemented a populist policy toward water resource access (Derman and Ferguson, 2003). Derman and Ferguson (2003) argue that the populist policy is aimed at bringing racial equity in accessing water, however it

has resulted in the middle class and ZANU-PF supporters benefiting at the expense of the rural poor. This therefore means that access to water resources in rural Zimbabwe is politically constructed and subject to multiple institutions and discourses from the grassroots to the global level. As demonstrated in Chapter Seven, water resources in the Nyamakate area are regulated by Borehole Committees and this regulation cascades down from the national and global level. For example, based on the four Dublin principles[69], the Zimbabwean government created The Zimbabwe National Water Authority (ZINWA) that promoted amongst other policies' commoditisation of water. The water point committees are unique to the Nyamakate area. Contrary to this institutional arrangement, studies have documented that traditional leadership structures are active in regulating access and use of water resources in other parts of rural Zimbabwe (Scoones and Cousins, 1991; Sithole, 1999, Mbereko, *et al,* 2007; Chingwenya and Muparamoto, 2009). Water resources access is generally contested at both the institutional level and the actor level in Zimbabwe (Scoones and Cousins, 1991; Sithole, 1999; Derman and Ferguson, 2003; Chingwenya and Muparamoto, 2009). The management of water resources is important since water is the basis of life (Falkenmark, 1989) and hence, changes to any water resource makes the households vulnerable as they rely on water for reproductive and productive uses. Any change in the quantity or quality of the water resource is important for the Nyamakate area since it is situated in a semi-arid zone that is prone to droughts[70].

The findings of the household water deficiency mapping show that HIV and AIDS affected households had a higher water deficiency than indirectly and unaffected household for the sampled households, with the exception of Juliet Village (Figure 9.1; 9.2 and 9.3). Two unaffected households from Juliet Village had the highest water deficiency in the village. Of the two households with high water deficiency, one had a household size of 13 people and the other used water for irrigating a household garden (Household 38 and 37 respectively). The three HIV and AIDS affected households from Juliet Village have a water deficiency of 150-199 litres per day (Figure 9.1).

[69] The fourth principal of the Dublin agreement states that, "Water has an economic value in all its competing uses and should be recognised as an economic good" (Derman and Feguson, 2003).
[70] See Section 4.6 for more information on the rainfall and physical characteristics of the Nyamakate area.

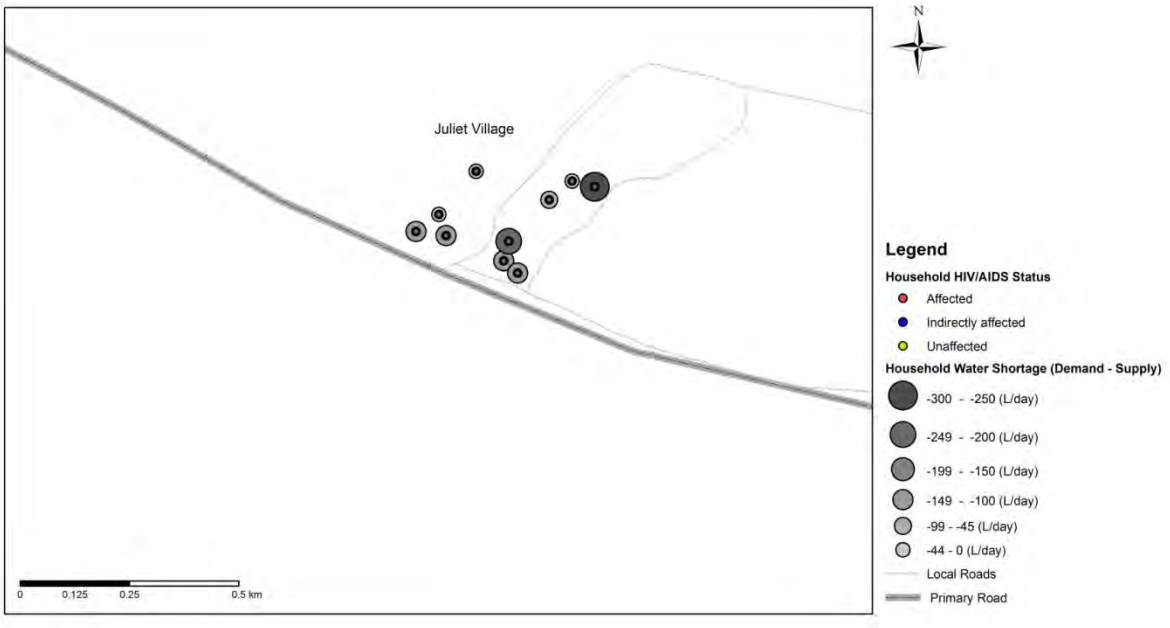


Figure 9.1 Juliet Village household HIV and AIDS status and water shortage

Mapping of water deficiency for Hotel Village shows that HIV and AIDS affected households have higher water shortage than indirectly and unaffected households (Figure 9.2). An HIV and AIDS affected household close to the game fence had the highest water deficiency of between 200-249 litres per day. HIV and AIDS households which are closer to the borehole have lower water shortage of below 149 litres per day (see Figure 7.2 and 9.2). An indirectly affected household (Household 29) had the least water deficiency in Hotel Village of 44 litres per day.

While in Villages 25 and 27a, two HIV and AIDS affected households have the highest water deficiency (Figure 9.3). Unaffected households had the least water deficiency in comparison to the affected and indirectly affected. Most of the interviewed households that are closer to the Village 25 borehole have a lower water shortage as compared to households that are at a distance (See Figure 7.4 and 9.3). As noted above, Village 27a's borehole was reported as being non-functional during the dry season (Chapter Seven).

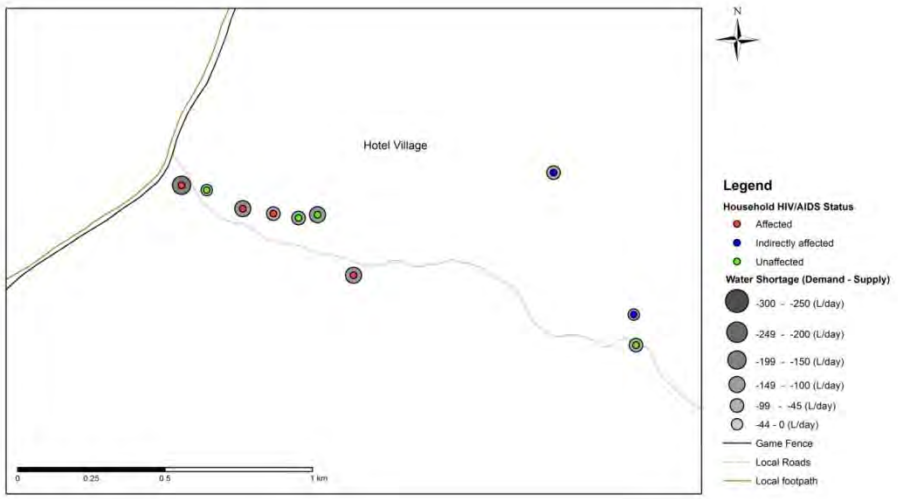


Figure 9.2 Hotel Village HIV and AIDS status and household water shortage.

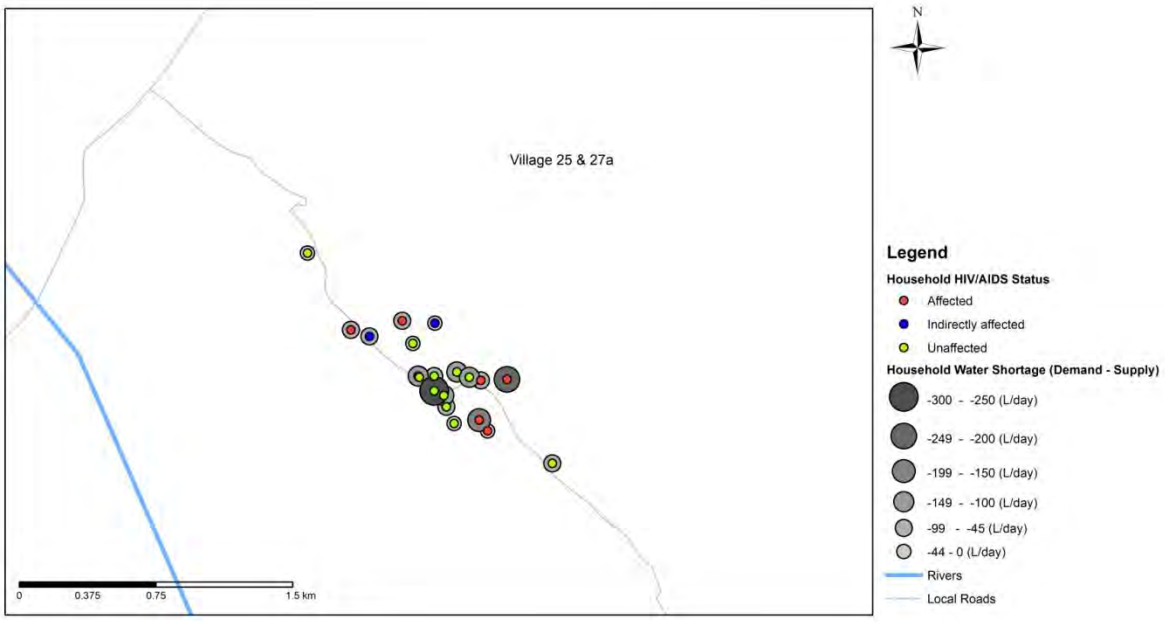


Figure 9.3 Village 25 and 27a households HIV and AIDS status and water shortage.

Studies from southern Africa demonstrate that water resources are in general declining and this is leading to water scarcity (Nohara, *et al.,* 2005; Chingwenya and Muparamoto, 2009; Magadza, 2010). Savenije (2000) argues that there is no water scarcity for primary uses (like cooking, bathing and drinking), but that water scarcity can result from mismanagement of the water resources and the lack of financial resources to extract water. Chapter One presents the ten ways that water scarcity might arise, and Chapter Seven demonstrates the causes of water scarcity that are experienced by households in the Nyamakate area. These are: infrastructural failure, physical absence of water and the mismatch between demand and supply with more being demanded than what is supplied. The total water demand and supply for the 40 Nyamakate households that participated in this study was 8065 and 4690 litres per day respectively (Table 9.1). This means that the sampled households had an average water deficit of 3375 litres per day, which translates to an average deficit of 84 litres per household per day (Table 9.1). Savenije (2000) cautions that research should consider the uses of water when studying water scarcity. This study considered primary water uses in accounting for the quantity of water demanded and supplied to the 40 households.

As alluded to in Chapter Five, Nyamakate can be divided into two sections, the upland and the lowland area. The volume of water supplied collectively per upland and lowland area, per day, is 1435 and 3255 litres per day, respectively (Table 9.1). When household water demand per day is aggregated for upland and lowland households, the total volume of water demanded is 3075 and 4990 litres respectively (Table 9.1). The lowland households have a higher water supply and demand than those in the upland yet the former have more ground water and water points (Figures 7.2, 7.3 and 7.4).

Table 9.1 Water supply and demand in the upland and lowland area of Nyamakate per day (Source: household interviews).

Region	*Water Supply (Litres)*	*Water Demand (Litres)*	*Deficit (Litres)*
Upland	1435	3075	1640
Lowland	3255	4990	1735
Total	4690	8065	3375
Average (per household)	117	202	84

A number of studies from southern Africa reveal the seriousness of the water scarcity in the region, with the impacts being more severe for the rural populations as they rely on rain water (Magadza, 2010; Ndebele-Murisa, *et al.,* 2010). As shown in Chapter Two, two bodies of literature attempt to explain water scarcity in rural Zimbabwe; firstly, some studies blame socio-demographic factors and the lack of infrastructure, and then other studies blame climate change. Some of the participants argue that water scarcity is being caused by an increasing population that is outgrowing the water resources[71] (Interviews 1, 6, 8, 16, 23) (see Chapter Seven). In the first body of literature, Malthusian thinkers apply the theory of population growth which outstrips food production to explain environmental degradation (Falkenmark, 1989; Neumann, 2005; Guthman, 2011). The solution they offer is to curb population growth since it results in over consumption of natural resources as people attempt to produce enough food (Neumann, 2005). Political ecologists have analysed the global food budget and argue that the world is over-producing food, resulting in diseases like obesity in developed countries (Guthman, 2011). Hence, for political ecologists, natural resource degradation is a symptom, result and cause of under-development (Blaikie, 1985; Neumann, 2005). To blame population growth for water scarcity in the Nyamakate area ignores the constantly shifting dialectic between social actors and the natural environment.

Chapter Eight demonstrates that the Nyamakate community is currently coping with the problems of water scarcity and HIV and AIDS with very limited state, NGO and private sector support. In order to cope, households exploit natural resources such as the water. For example, take the household with two members on ARVs who cultivate tobacco and other cash crops in order to raise the financial resources required to cope with HIV and AIDS (Interview 40, 14/11/2011). These productive activities require a lot of water and have been blamed by participants for resulting in siltation and water scarcity. Local farmers produce cash crops instead of maize due to the low prices being paid for food crops by the state-run Grain Marketing Board (Poulton, *et al.,* 2002). The cash crops are exported to global markets where they fetch high financial returns, as opposed to the market for grains which is subject to government populist regulations (Makamure, *et al.,* 2001; Poulton, *et al.,* 2002). The Zimbabwean government controls the prices of cash crops, and in crises situation, it returns

[71] The Nyamakate area is no longer receiving new settlers as people are taking advantage of the 'fast track land reform policy' and are going to other places. However, siblings of families that have been resettled here are allocated land when they are of age and have families when they cannot continue to stay with their parents (Interview 53, 07/12/2011).

the right to becoming the sole buyer of cash crops (Makamure, *et al.,* 2001). The findings of this study recognise the burden of population pressure on water resource, but argues that environmental degradation should be understood by analysing the relationship between the societal structures and the natural environment.

In the second body of literature, explanations of water scarcity in sub-Saharan Africa are explained by climate change. Southern Africa is vulnerable to climate change as erratic rainfall and increase in temperatures is affecting agriculture, fisheries, forestry and other industries that rely on weather, within the context of the region housing some of the poorest countries in the world (Strzepek and McCluskey, 2006). Studies have projected that surface runoff will decrease by up to 18% by 2100 in southern African region due to climate change (Nohara, *et al.,* 2005). Precipitation has been projected to continue being erratic and decreasing while temperatures increase (Magadza, 2010). This situation compromises the livelihoods of social actors and very few studies have been done to understand the experiences of the social actors in relation to the impacts of climate change on water resource (Ndebele-Murisa, 2010). Studies within political ecology argue that the vulnerability of actors and societies to the perturbations of climate change is not only determined by individual agency or the natural environment, but also by structural forces as well (Adger, *et al.,* 2001). Adger, *et al.,* (2001: 181) argues that "Vulnerability is therefore a socially constructed phenomenon influenced by institutional and economic dynamics." Hence, this study proposes that the vulnerability of the sampled households to water scarcity that results from climate change should be understood within the institutional context of Zimbabwe.

A number of studies have demonstrated that Zimbabwe's water resource are being affected negatively by climate change (Magadza, 2010; Ndebele-Murisa, 2010). However, Magadza (2010) argues that the Zambezi valley is the worst affected by climate change since the IPCC projections of 0.2^0C per decade have been nearly doubled. The Nyamakate rainfall patterns deminstrates that rainfall is erratic, but shows signs of a steady decline (Chapter Four). In the past decade, the Nyamakate area experienced three seasons (2003/4, 2006/7 and 2010/2011) have been drought years while two seasons (2002/3 and 2007/8) had above normal rainfall. It is difficult to find reference to the exact physical impacts of climate change on water scarcity, but it has been documented that climate change plays a part in the current water scarcity

being experienced in the Zambezi valley (Chapter Four and Seven). It is important to interrogate the role of societal structures and the social actor in explaining the impacts of climate change, as natural factors alone cannot explain the vulnerability of actors to the impacts of climate change.

Savenije (2000) argues that the groundwater that is available on earth is enough to cater for the primary needs of all the people on earth. The question becomes how to withdraw the water and allow people to access it in an environment characterised by social inequalities. Thus, the physical presence of water is not the issue, but rather the 'politics' of accessing water becomes the pertinent question. Observations made during the study (June-December 2011), show that in the study area, the lowland has lots of ground water but there are technological limitations to accessing the resource. With limited intervention from the state or donor institutions, the actors are not coping on their own. The situation is exacerbated by the high HIV and AIDS burden in the Nyamakate area.

The literature reveals that there are very few studies which interrogate the relationship between HIV and AIDS and water scarcity and variability, with the exception of some research which has been done in Botswana and South Africa (Ngwenya *et* al., 2004; Ngwenya and Kgathi, 2006; Ngwenya and Mosepele, 2007; Kgalushi, *et al.,* 2004). The literature shows that there are two dominant views about the relationship between HIV and AIDS and water scarcity and variability in southern Africa. One school of thought argues that HIV and AIDS is a shock to natural resources, such as water, as affected households utilise more of the natural resources than previously in order to cope. Another school of thought rather argues that households use fewer resources although they might demand more (Hunter, 2007; Sherbinin, *et al.,* 2007). The results of this research provide evidence that HIV and AIDS affected households use more water resources per household than the unaffected and indirectly affected households.

As indicated in Chapter Five, the households sampled for this study have been categorised into three categories, namely, affected, indirectly affected and unaffected by HIV and AIDS. HIV and AIDS affected households utilised an average of 145 litres per day, while their

average demand per day was 248 litres (Table 9.2). On the other hand, unaffected and indirectly affected households utilised an average of 104 litres per day, while their average demand per day was 179 litres (Table 9.3). Indirectly affected households on average demanded 141.4 litres and they consumed 97.85 litres per day. On the other hand unaffected households have an average demand of 192.5 litres per day and consumed 106.25 litres per day. The differences between water demand and supply was higher for HIV and AIDS affected (103 litres) households than in the other two categories combined (75 litres). Disaggregation of indirectly affected and unaffected households' results on water deficit shows that the former has a smaller deficit of 43.57 litres per day than the latter's 86.25 litres per day.

A female headed household in village 27a had the highest water deficit of 200 litres (Table 9.2). In this household there were two ill people and the village borehole was not functioning, hence the high water demand and low supply (Interview 17, 28/09/2011). Amongst the HIV and AIDS affected households, the one with the lowest water deficit (25 litres) was in village 25 and at the time of data collection their borehole was partially functional. Furthermore, the household that consumed the most water (350 litres/day) was in Hotel village and there are 13 members of the household (Interview 24, 15/10/2011). The total water deficit for all the HIV and AIDS affected households was 1345 litres. These findings and the water resource data for the area presented in Chapter 7 classify this area as one which falls into the World Health Organisation's first class of water scarcity which is water scarcity that results from unequal distribution and poor water quality, although in this case the situation is amplified by HIV and AIDS.

A household in Juliet Village with 15 members consumed the highest amount of water (300 litres per day) of the unaffected and indirectly affected households (Table 9.3). On the contrary the household that utilised the least amount of water (25 litres/day) is from Village 27a and it is an HIV and AIDS unaffected household (Table 9.3). This HIV and AIDS unaffected household is made up of six male members and the village does not have a functional borehole (Interview 18, 29/09/2011). Four of the interviewed households did not report a water deficit in their households (Table 9.3). Only one out of the four is in the lowland where there is more water than the dry upland (Interviews 29, 35, 23). The

household head of the household without water deficit is the village health worker and a Borehole Committee member (Interview 1, 12/09.2011).

An ill person will increase the household need for more natural resources, in this case water, however, the longevity and prolonged shock of HIV and AIDS on the household makes the impacts of the pandemic more severe (Barnett and Blaikie, 1992). Although it is true that HIV and AIDS places more stress on households than other diseases, the experiences of the affected households are also dependent on institutions such as government, NGOs and private pharmaceutical companies (King, 2005; Biehl, 2011). All the 40 interviewed households indicate that having an AIDS patient within the homestead increases the demand for water. Participants indicated an increase in the need to wash linen and clothes, cooki, bath the patient and wash the utensils used by the patient. They stated that care givers strive to maintain the highest standard of health possible under the circumstances. A middle aged man from village 25 stated that the household used an additional 50 litres of water in order to take care of their HIV and AIDS infected patient (Interview 2, 13/09/2011). In one household in Juliet Village, the participant said, “For the patient, I used 12 more buckets above the eight buckets the household required per day. We needed to bath and wash their soiled linen and clothes” (Interview 31, 23/10/2011).

Table 9.2 Water demand and supply for the HIV and AIDS affected households in Nyamakate.

Household ID	*Water Ss (L)*	*Water Dd (L)*	*HIV status*
2	50	125	Affected
3	80	125	Affected
8	25	175	Affected
9	75	100	Affected
16	50	125	Affected
17	100	300	Affected
21	250	300	Affected
22	100	225	Affected
24	350	500	Affected
27	250	375	Affected
31	200	300	Affected
32	150	250	Affected
40	200	325	Affected
Total	1880	3225	
Mean	144.6154	248.0769	

Table 9.3 Water demand and supply for the HIV and AIDS unaffected and indirectly affected households.

Household ID	*Household HIV and AIDS status*	*Water Supply (Litres)*	*Water Demand (Litres)*	*Water Deficit (Litres)*
1	Unaffected	150	150	0
5	Unaffected	50	175	125
6	Unaffected	50	125	75
7	Unaffected	75	100	25
10	Unaffected	100	125	25
11	Unaffected	150	250	100
12	Unaffected	50	150	100
13	Unaffected	50	150	100
14	Unaffected	75	150	75
15	Unaffected	75	150	75
18	Unaffected	25	75	50
19	Unaffected	50	300	250
23	Unaffected	100	100	0
25	Unaffected	200	250	50
26	Unaffected	100	200	100
28	Unaffected	125	175	50
33	Unaffected	100	125	25
35	Unaffected	100	100	0
36	Unaffected	200	500	300
38	Unaffected	300	500	200
4	Indirectly affected	80	100	20
20	Indirectly affected	75	125	50
29	Indirectly affected	125	125	0
30	Indirectly affected	150	200	50
34	Indirectly affected	125	200	75
37	Indirectly affected	30	40	10
39	Indirectly affected	100	200	100
Total		2810	4840	2030
Mean for indirectly affected		97.85	141.4	443.57
Mean for unaffected		106.25	192.5	86.25

The household interviews showed that HIV and AIDS affected households increased their water from between 2 to 12 buckets (an increase of 72%). A health professional at the local clinic said they recommend 400 litres per day to be available for use in caring for a bedridden patient (Interview 51, 05/12/2011). The health workers are aware that in reality households nursing an HIV and AIDS patient in some parts of the Nyamakate community are getting much less water than required because of the water scarcity and variability. Recognition of the need for extra water in affected households by the community was reported by one of the Nyamakate residents, who stated that, "At times an HIV and AIDS affected household might be allocated two more buckets above their normal water allocation at village water points" (Interview 53, 07/12/2011).

The literature relating to access to scarce natural resource within communities reveals that there are often contests among potential user groups (Sikor and Lund, 2009). In rural Zimbabwe, areas that have serious water scarcity have been reported to have conflicts over the main water resources such as water points and vleis (Scoones and Cousins, 1991; Sithole, 1999, Mbereko, 2008). Participants were asked about their experiences with how HIV and AIDS hinder the access to water resources among affected households in the Nyamakate area. Most (17 out of 27) of the participants whose households were indirectly or un-affected by HIV and AIDS indicated that there was no rule that prohibited HIV and AIDS affected or infected people from accessing water resource. The following statements show community understanding of how affected households gain access to water resource:

> Being HIV and AIDS positive does not affect anyone from fetching water at the communal water points. People understand that HIV and AIDS are not transmitted at the borehole. The community members do not mind if an HIV and AIDS positive person comes to the well, but Tuberculosis (TB) is a problem. TB patients transmit their sickness to others easily so people do not want them at the borehole…. No one stigmatises people with HIV and AIDS, even if one is ill and comes to the borehole (Interview 1, 12/09/2011).

> It [HIV and AIDS] does not disturb anyone from fetching water. You just have to find someone to look after the ill person. At times when children come back from school you will get a chance to go and collect water. You will not just go to fetch water at

> will as usual but now you have to makes sure that the patient is comfortable before you can leave the house (Interview 27, 17/10/2011).
>
> Being HIV and AIDS positive does not affect others in anyway and people are ok with [happy about] an infected person coming to the community water point. The people who go to the borehole need to maintain a good standard of hygiene at the water point so as not to start problems with other villagers (Interview 29, 22/10/2011).
>
> They [HIV and AIDS positive people] do not affect anything. The ill patient gets water not as an individual but as part of the household (Interview 9, 20/09/2011).

The statements demonstrate how access to water points for primary water use is open to everyone in the Nyamakate area. The responses also show that community members believed that access by HIV and AIDS people or the washing of their linen at the community water points should not be allowed although this is not enforced. Custom stipulates that no one should be denied access to water points but villagers do not like someone suffering from TB at the water point. Hence, someone with TB might be discriminated against even without anyone verbally telling them to go away from the water point. Some of the common ways that people discriminate against people suffering from TB include, washing any utensil that the patient touches or uses, avoiding body contact and taking about a person's illness without directly referring it to them (FGI 1, 2, 4, 5, 7)

This section has discussed how water scarcity complicates the lives of the HIV and AIDS affected households in Nyamakate. It has been noted that HIV and AIDS affected households utilise more water and have the biggest water deficit when compared to other residents of the Nyamakate area. Water resources are contested in the Nyamakate area and HIV and AIDS affected households have to compete in order to be able to access water.

9.3 The Influence of HIV and AIDS on Water Resources.

The impact of HIV and AIDS on rural communities in sub-Saharan Africa demonstrates that there exists a complex and reciprocal relationship between the disease and the biophysical and socio-political dimensions of human health (King, 2012). Most studies that have analysed

the influence of HIV and AIDS on water resources and their management tend to focus on the effects the pandemic has on the human resources put in place to manage water resource (Ashton and Ramasar, 2002). These researchers argue that HIV and AIDS is responsible for the loss of tacit knowledge about water resource management through the deaths of experienced water resources managers. Other studies have particularly analysed the impacts of the HIV and AIDS pandemic on community-based water resource management. Haddad and Gillespie (2001:491) state that, "HIV and AIDS might undermine the ability of community and user groups to pool risk and act collectively to sustainably manage common property including range land, cropland and river basins." Such studies have tended to ignore the socio-political dimension of the relationship between HIV and AIDS and water resources. This study adds to this literature by demonstrating that HIV and AIDS has affected the ability of affected households to access water resources. This section will discuss the influence of HIV and AIDS on access to water resources within the framework of Zimbabwe's political and economic crisis, and the natural environment.

Marginalised social actors, especially the rural poor, have to contest their access to scarce natural resources such as water (Scoones and Cousins, 1991; Sithole, 1999; Sikor and Lund, 2009). Sikor and Lund (2009: 1) argue that "Access and property regarding natural resources are intimately bound up with the exercise of power and authority." Hence, access to natural resource is determined by political institutions, and this complicates access to water resources for households affected by HIV and AIDS. Access to water resources in Zimbabwe is highly contested because of the importance for livelihood (Scoones and Cousins, 1991; Sithole, 1999; Mbereko, 2010). There is a paucity of knowledge, however, about the experiences of HIV and AIDS affected households in relation to the contestations over scarce water resources.

This study shows that most of the HIV and AIDS affected households (11 out of 13) in the study area indicated that HIV and AIDS compromised their access rights to water resources. The 11 caregivers who experienced problems accessing water resources were all women. The response of household interviewee 29 presented above, indicates that the community has rules for the maintenance of hygiene as a social condition for use of communal water points by HIV and AIDS affected households. The researcher frequently observed that women from

these households would wash near the boreholes or other communal water points (July to December 2011). Members of Household 17 indicated that they washed soiled linen and clothes at the communal water points in the night. They feared being stigmatised since some people are disgusted by the soiled linen of an HIV and AIDS patient being washed at the water point.

The availability of water also hinders access to the resource by HIV and AIDS affected households. Inferring from the water demand and supply estimates presented above, it is evident that the households on the upland have very little water available to them. One participant from an HIV and AIDS affected household from the upland area said, "The problem is water availability, because you cannot fetch as much water as one would require to take care of the household especially with the high water demand by the patient [because there isn't the water available]" (Interview 2, 13/09/2011). Another participant from village 27a said, "Yes if the committee is rationing water at this time … we do not get enough water" (Interview 20, 30/09/2011). These testimonies point to how HIV and AIDS affected households do not access enough water. The physical scarcity of water is one of the factors that are responsible for creating water scarcity and variability (see Chapter One).

Furthermore, the family structures of HIV and AIDS affected households impact their access to water. In these households, each patient had only one caregiver and therefore it is difficult to be able to go and fetch water. Culturally, it is not appropriate for an ill patient to be left unattended in the house for whatever reason, even for the fetching of water. Participants of focus group interviews indicated that the care giver will be held responsible for the death of a person in the event of his/her passing-away unattended (FGI 2, 24/11/2011). Women who participated in FGIs have reported incidents where women have been sent back to their maiden families for allowing their husbands to die unattended (FGI 1, 5 and 7). Such punitive measures are a result of the patriarchal structure of the society which places the female's position as subservient to their husbands (Higgins, *et al,* 2010).This situation creates a dilemma for the caregivers. The following quotations from the HIV and AIDS affected households illustrate their experiences of this dilemma.

> I just have to find someone to look after the bedridden ill person, in order for me to go to fetch water. ... I no longer go to fetch water at will as usual. I have to make sure that the patient is comfortable and there is someone attending him before going to the borehole (Interview 27, 17/10/2011).
>
> ... I cannot leave an ill patient alone in the house. He requires frequent help and attention, so it is difficult to leave the patient. So, I look for someone else to help me fetch water. If the patient dies and you are not there it is a problem with other relatives and the surrounding community. They will say I left a person to die unattended because water was more important to me over human life. Some might even say I am the one who caused the person's death. ... If there is more than one person in the household then it is fine one goes to fetch water while the other takes care of the patient. We migrated to Nyamakate as one family - we do not have any other relatives here, so if there is an illness of a serious nature I ask my children to come and help me (Interview 31, 23/10/2011).
>
> If the ill person wants to go to the borehole we refuse to let them go there. Unless in cases were the patient is still strong and can carry the bucket without any problems. In the past before the [availability of] ARVs, there were people who were disgusting when they were ill, for example, they would be smelly and coughing. These days it is different. Rarely do you see bed ridden patients. Everyone is sick but they look fine and can still go around their daily chores (Interview 34, 28/10/2011).

The above statements demonstrate the challenges posed by HIV and AIDS on the caregivers in the interviewed HIV and AIDS affected households. The problem is amplified by water scarcity, as some of the village water points are non-functional and households have to fetch water from other villages which are at a distance (see Chapter Eight). The income levels of HIV and AIDS affected households reveal that most of these households cannot afford hired labour to fetch water on their behalf (see Chapter Seven).

The households in which bed ridden HIV and AIDS patients are being cared for are forced to get someone to be with the patient at all times of the day. Households mostly rely on children that live within the homesteads. Some of respondents reported that they called in relatives to assist with the fetching of water (Interview 3, 8, 9, 16, 21, 24, 27 and 40). In five out of the

eight focus group interviews, participants stated that the final option would be to rely on neighbours and friends. When households that have one adult member who is the caregiver, they rely on neighbours for help,

> When the patient is very ill, it is a problem because one might have to ask or hire neighbours to fetch water for them. This now depends on your rapport with the neighbours. If you have no one that you are in good books with, then you have to fetch the water for yourself (Participant in FGI 2, 24/11/2011).

Participants in focus group interviews 5 and 8 (02/12/2011 and 09/12/2011, respectively) argued that everyone in their community has a friend. These friends or the friends' family members would also usually assist in fetching water and with other household chores. One participant complained about having to send her friend's sons to fetch water for her. She said,

> Not having children of your own in the household is a curse. I send my friends children to go and fetch water for my household. The boys are a problem if you send them [as] they take a long time to come back. So I prefer to wait for the daughter to return from school. If you send the boys in the morning, at times they return with the water around 18:00. At times they do not even go to fetch the water, they go to hunt for birds, mice and hares in the bush, using my buckets. Well, at times they also give me part of their hunt. When I do not have water I heap the soiled linen in the house (Interview 16, 28/09/2011).

This situation is explained by the gender roles defined by the Shona culture. It was observed that boys would not normally be assigned to fetch water with buckets but with bigger containers and a cart. However, it has become acceptable in the recent past for them to fetch water with buckets using scotch-carts or wheel-barrows (Observation between June and December 2011). In an informal discussion with a teenager he indicated to me that playing in the bushes with other boys was preferable to staying at home (personal communication 15/09/2011). If one stayed at home the elders send them to do chores hence, they prefer staying out of the house until it is late afternoon and time to go and collect livestock from the grazing land.

In the worst case scenario, some caregivers do not have a child, friend or neighbour to assist them to fetch water or look after the bedridden patient. For example, household 34, reported

above, indicated that her family migrated into the Nyamakate area without members of the extended family or kinsmen and had not built any close relationships with anyone in the area. This was said not to be an unusual situation in the Nyamakate area (FGI 5, 02/12/2011). The other category of households who do not have anyone to help the caregiver are those who are not on good terms with their neighbours (FGI 2, 24/11/2011). These findings demonstrate low levels of social capital, which supports the findings of other studies reporting the low levels of social capital amongst resettled farmers in Zimbabwe (Barr, 2004).

Some of the HIV and AIDS affected households hide their ill patients from the public knowledge because of fear of stigmatisation. They fear the patient being subjected to witchcraft, the patient being taken to hospital and people gossiping about their AIDS patient[72]. The affected households do not want other community members talking about their patient, hence do not ask for assistance from non-family members. A number of households have had different experiences of taking care of a bed ridden patient without any help from other people. In one focus group interview, a women narrated how she was taking care of her bedridden child while managing to fetch water (FGI 1, 24/11/2011). The following extract presents a dialogue between the researcher and participants of focus group interview (FGI 1, 24/11/2011).

Participant 1: … first thing in the morning I used to bath my patient with the left over water from the previous day. I would cook porridge for him. When the patient is sleeping I rush to fetch water at the borehole. At times when I came back he will be asleep or awake, but I would always check on him.

Researcher: But you would have brought one bucket, and yet you need more - how did you manage?

Participant 1: If I check on the patient and he is sleeping I would rush to fetch more water until the required amount of water is reached. It would only become a problem when the patient is awake as you cannot run back and forth as much as you would want.

Researcher: Did not anyone from the community help you?

Participant 1: No one helped me.

[72] The reasons for hiding the patients by their families and caregivers are discussed in Section 6.2.

Researcher: Why didn't anyone from the community help you?

Participant 2: [another woman responded] It is just not in the culture of the people in the Nyamakate area to help one another. It is not because people do not want to help or there is something wrong with you, helping a household with illness is one practice that is not commonly practiced in the Nyamakate community.

Participant 3: Let me tell you the problem. The people with ill people in their homes do not tell anyone that they have an ill person in their home and yet they need help.

In this case it is evident that women are willing to work extra hard in order to fetch water. The caregiver has to make the best of the time when the patient is asleep and do most of the chores. This case was drawn from the lowland of Nyamakate were there is relatively more ground water than the upland. This situation is worse when it is in the upland region of Nyamakate were water allocation takes place at particular times and water is not always available throughout the day. A participant of FGI 5 said,

> I would just leave the patient in the house and go to fetch water. I do not spend the whole day at the borehole - it is just for a little moment. That is what normally happens when you have a patient and you are leaving alone you just have to hurry to fetch water leaving the patient unattended. Someone with an ill patient in the household will not linger while at the borehole, she would hurry to come back to the patient. If they come to the borehole people will give them the privilege of jumping the queue so that she can quickly go back to the patient (02/12/2011).

While the above discussion shows how affected households are able to access water, water scarcity has had other impacts on HIV and AIDS affected households.

HIV and AIDS affects the human capital of the households due to the increased workload of caring for the sick patient and incapacitated patients who are no longer productive (Haddad and Gillespie, 2001). The impact of the loss of human capital is more severe in the rural areas than in urban areas due to their reliance on the natural resources that require manual labour to harvest, and the high levels of poverty in these areas (Haddad and Gillespie, 2001). The impacts of HIV and AIDS and water scarcity negatively affect the households' level of

hygiene in the Nyamakate area. Evidence suggests that water scarcity has the greatest impact on the hygiene of the household with an HIV and AIDS infected person. The quotations below illustrate how the households' hygiene is compromised by water scarcity.

> … A patient might require 40 to 60 litres. Yet at the local water point this is the household ration. They do not care that the patient increases the household's water demand. This means that hygiene is [negatively] affected because you cannot get water to do laundry and other things. So we end up packing dirty linen in the house this leads to other illnesses because of flies (Interview 3, 13/09/2011).

> If we want to adhere to the recommended hygiene standard it is difficulty because there is no water to clean up the household or the mess being caused by the patient. The patient requires up to four buckets that are not used by other household members. It becomes difficult to take care of an HIV and AIDS positive person. After cleaning them I will not have water to wash my hands or to wash the spoiled linen. Some of the linen has blood stains and you cannot wash them and risk contracting the disease. Contaminating the patient with bacteria is possible, since you attend to the patient without washing your hands (Interview 27, 17/10/2011).

> If there is no water it is a problem because the whole night I would be changing linen and clothes when he messes up and if there is no water in the morning the house smells. The patient would also need to eat, bath and worse [I have to] wash the soiled linen so the house becomes a health hazard. When people come to visit the patient no one wants to go in because of the smell and filthiness. We would be breeding more germs to cause other diseases to the patient and to others (FGI 1, 24/11/2011).

> This situation can cause the spreading of diseases such as cholera because of poor hygiene and the high possibility of cross contamination (FGI 4, 01/12/2011).

> If there is no water it is a problem as flies will infest the area. They will land on the soiled linen and then go to land on your food, so the whole household and community is affected (Interview 22, 14/10/2011).

There is diversity in the ways households affected by HIV and AIDS responded to the challenges posed by HIV and AIDS and water scarcity. Water scarcity is not experienced in the same way by different households in Nyamakate because the lowland had more ground water than the upland area (see Chapter Seven). In upland villages where water rationing is

practiced, the problems posed by water shortages are more acute than in the lowlands. Some participants in the upland reported going to fetch water from the water point and finding that there was no water available to take care of a bedridden patient (Interviews 2, 3, 16 and 17). Interviewed households indicated the following as coping mechanisms: cutting down on bathing, using less water when washing linen and dishes and going to fetch water from neighbouring villages.

The evidence shows that HIV and AIDS affected households demand more water than other households. Other studies in Africa have also demonstrated that HIV and AIDS increases the household's water demand, and this has been largely attributed to the increased demand of maintaining high standards of health and hygiene by the caregivers (Magrath, 2006; Nkongo and Chonya, 2009). Thus, it is proposed here that HIV and AIDS creates additional demands on the water resources of the Nyamakate community, and this could be interpreted here as a 'shock'. Since the disease increases the water utilised in the interviewed households by as much as two 12 or 25 litres buckets, the disease increases the water footprint of HIV and AIDS affected households. A study by Nkongo and Chonya (2009) demonstrates that urban households affected by HIV and AIDS have better access to portable water from piped water than their rural counterparts who rely of water sources that are outside the homestead. The issue for urban households affected by HIV and AIDS becomes the high cost of piped water rather than the distance to the water source, and the quality, quantity and availability of water, hence need to examine the water resource access regime in rural settings.

With the exception of the studies from Botswana (Kgathi, *et al.,* 2004; Ngwenya and Mosepele, 2007), other researches do not mention any institutional support for HIV and AIDS patients getting formal assistance to access water (Magrath, 2006; Nkongo and Chonya, 2009). The households in the Nyamakate area interact with water resources in different ways since access is determined by Borehole Committees, government and the household structure. The historical and institutional dynamics of the resettlement area determine the interaction between HIV and AIDS affected households and water resources (see Chapter Six). Household structure determines the availability of household members to care for the patient and fetch additional water where possible (see Chapter Seven). The lack of adequate institutional support means that the Nyamakate household have limited support in

gaining access to adequate water and thus experience the hardships associated with HIV and AIDS in the face of water scarcity and variability (see chapter Eight). The lack of institutional support is informed by the different policies adopted by government and donor community over time of the resettlement (Biehl, 2011).

Peters, *et al.,* (2008) study in Malawi demonstrates a lot of similarities with this study as it considers the social and political economy of HIV and AIDS in a rural area. Even though the situation is very stressful, households do their best to help in cases of illness so that everything looks normal to an "outsider'. Peters, *et al.,* (2008) refer to such responses to the impacts of HIV and AIDS as 'striving for normality'. In Malawi it was noticed that the rural people would try to contain the perturbations brought about by AIDS at huge sacrifice in order to keep the society normal (Peters, *et al.,* 2008). The interviewed affected households attempted to make it appear as if things were normal while managing the illness within the demanding stipulations of their cultural beliefs.

9.4 Conclusion

This chapter aims to analyse the complex relationship between HIV and AIDS and water resource scarcity being experienced in the Nyamakate area within the socio-political context. In recent years, scholars have been increasingly utilising a political ecology framework for the interpretation of the complex interaction of HIV and AIDS and the natural environment at the level of the household. This chapter presents the diverse experiences of HIV and AIDS affected households in the Nyamakate area, especially HIV and AIDS affected households from the upland area, which is most negatively affected by water scarcity. Here, households experience more acute water shortage than their counterparts in the low-land area, and alternative water sources are more distant.

The issue of access to water resources becomes an important one since water resources are usually characterised by contestations in semi-arid and arid areas of Zimbabwe and the sub-Saharan region. Furthermore, cultural beliefs, patient caregiving as well as the lack of

external institutional support has led to water shortage being experienced more acutely by HIV and AIDS affected households. Although the government has adopted a populist policy towards access to land and water in rural Zimbabwe, it still lacks the financial resource to deliver on its policy. Thus, water scarcity resulting from the decline in water resources and lack of infrastructure to access water has a significant impact on the most vulnerable households which are HIV and AIDS affected households.

The households in the Nyamakate area have diverse experiences of the impacts of HIV and AIDS and water scarcity and variability. Evidence shows that the water footprint of HIV and AIDS affected households increases and supports this argument in the existing literature (Kgalushi, *et al.,* 2004; Ngwenya and Kgathi, 2006; Ngwenya and Mosepele, 2007). The water supply and demand data show that these households consume more water per household than other households. This confirms the argument that HIV and AIDS affected households have a bigger water footprint than other households.

On the other hand, HIV and AIDS have implications on the ability of the affected household to access water resources. HIV and AIDS reduces the human capital of the affected households, hence households without adequate labour will access less water than is required. The lack of water within the affected household compromises the hygiene standards of the house. Community members have come up with Borehole Committees as stewards of communal water points and they have created *de facto* rules of accessing. These rules are based on maintaining the quality of water and hygiene of the area around the water point, and in so doing, inhibit HIV and AIDS affected households from doing laundry at these point. With increasing water scarcity these households resort to washing their linen during the night when other community members are not present at the water point. Chapter Six argues that the historical and institutional context are important in shaping the construction of reality; Chapter Seven presents results on the households experiences of HIV and AIDS; chapter Eight presents findings on the households experiences of water scarcity and variability; and chapter Nine argues that HIV and AIDS and water scarcity and variability are experienced by the Nyamakate households and community, and these perturbations shape their realities in the context of the historical and institutional framework. Finally, Chapter Ten presents the discussion and conclusion of this thesis.

Chapter 10: Discussion and Conclusion

10.1 Introduction

Chapter Ten presents a discussion of the findings of the research and the conclusion of this thesis. This study aims to understand the experiences, responses to, and interpretations of the Nyamakate households of the complex relationship between HIV and AIDS and water resource scarcity and variability. This chapter aims to present a synthetic understanding of the Nyamakate households' experiences of the relationship between HIV and AIDS and water scarcity and variability using the framework of post-structural political ecology as a meta-theory. It reflects upon the findings in relation to the historical and institutional dynamics that inform the reality constructed and experienced by the Nyamakate households and community. To understand the Nyamakate households' experiences of HIV and AIDS and water scarcity and variability, the study adopts a critical, constructivism paradigm. A qualitative methodology is applied in order to collect the testimonies and narratives of people living in Nyamakate, which are then used, along with primary documentary data, to provide an empirical understanding.

Section 10.2 discusses three issues. Firstly, the section reflects on the value of political ecology as a framework for understanding household experiences and how participants understand the impacts of HIV and AIDS and water scarcity and variability. Secondly, the section discusses the main findings of the study. The set of rich oral testimonies and narratives related to how the Nyamakate households experience the impacts of HIV and AIDS and water scarcity and variability will be interpreted in order to shed light on the relationship between the HIV and AIDS and water scarcity and variability as the two main stressors impacting these households. However, it is recognised that this interpretation is discursively constructed, revealing the patterns of meaning for local actors as well as being informed by the historical and prevailing societal structures within the country. Finally, Section 10.2 presents the conclusion to the chapter.

10.2 Summary and Discussion

The literature review demonstrates a dearth of theorisation of the relationship between HIV and AIDS and water scarcity and variability, since studies have pursued these two phenomena as discrete analytical subjects, resulting in them being investigated separately (Barnett and Blaikie, 1992; Carter and Charles, 2010; King, 2010). Studies on the impact of HIV and AIDS are predominantly carried out by economists, demographers and epidemiologists (Barnett and Clement, 2005; Ansell, *et al.,* 2009; Lopman, 2008; Gregson, *et al.,* 2010). These studies utilise panel data to produce a variety of abstract models of the impacts of HIV and AIDS on households (Donahue, *et al.,* 2000; De Waal and Whiteside, 2003; Meher, 2007). Barnett and Clement (2005) classify research on HIV and AIDS into eight categories, however, they omit as a category, research that relates HIV and AIDS to the natural environment. On the other hand, the impact of water scarcity and variability on rural households is mainly studied by geographers, hydrologists and ecologists (Thomas and Twyman, 2005; Magadza, 2010; Field, *et al.,* 2012). In the past two decades, there has been an increase in scholarship on the relationship between health and the natural environment (Lewis, 2005). However, this shift in thinking is dominated by medical studies that perceive the environment as the host of opportunistic infections causing organisms such as cholera (*Vibrio cholera*) and schistosomiasis (Obi, *et al.,* 2006). These studies omit the effect of power relations on health, society and the natural environment. This study applies post-structural political ecology theory to understand the interaction of HIV and AIDS and water scarcity and variability.

Structural political ecologists, who study the relationship between HIV and AIDS and the natural environment, conceptualise HIV and AIDS as a 'shock' (Barnett and Blaikie, 1992; Mayer, 1996; Kalipeni and Oppong, 1998). These scholars assume a causal chain of explanation whereby HIV and AIDS impacts or act as a shock on a social unit (e.g. household or community), and then shapes or reshapes the interaction of the social unit with the natural environment (Barnett and Blaikie, 1992). This early work was significant in that it brought to the fore that HIV and AIDS was a long term shock and that the vulnerability of affected households was caused by the societal structures. This study has gone beyond structural political ecology by interrogating the lived experiences and the realities of HIV and AIDS at the level of the actors. It is therefore assumed that the households' experiences of HIV and

AIDS and water scarcity and variability are socially constructed as they are a product of a particular set of social relations, experiences, and understandings in a specific context (Terre Blanche and Durrheim, 1999). Furthermore, both the environment, and the social actors are products of the societal structures that influence how the environment is constructed, and the worldview and interpretations held by the actors, respectively (Robbins, *et al.,* 2010). One of the recent developments within political ecology is the focus on health which can be viewed as an emerging body of scholarship (Barnett and Blaikie, 1992; King, 2010). Post-structural political ecology research on health provides an understanding of health issues within their social and natural environment settings, as well as how these issues are shaped by the societal structures.

The theory of post-structural political ecology of health focuses on the constructed realities that emerge from the actors' experiences of ill-health and the natural environment in the context of political economy. Aggarwal, *et al.,* (2012: 1) argue that,

> The political ecology of disease framework joins disease ecology with the power-calculus of political economy and calls for situating health-related phenomena in their broad social and economic context, demonstrating how large-scale global processes are at work at the local level, and giving due attention to historical analysis in understanding the relevant human environment relations.

In the context of this study, the application of the post-structural political ecology framework to understand actors' experiences with HIV and AIDS affords the opportunity to analyse how affected households experience, react to and interpret water scarcity and variability. Thus it can be argued that natural resources change impact on the HIV and AIDS affected households, and in turn HIV and AIDS affects the use of the natural environment. Human interaction with the natural environment is determined by the broader social, physical, political and economic 'environment' in which people are situated, embracing their physical, biological, socio-economic and political contexts (Harper, 2005; Bhasin and Nag, 2011).

The interrogation of the relationship between water scarcity and HIV and AIDS poses methodological problems, since post-structural ecology is multi-scalar and framed by both a critical and constructivist paradigm. This study asks both structural and actor agency

questions, hence it adopts both these paradigms. Household heads, key community informants and key stakeholders were sampled as the main groups of local people with whom the researcher would engage. Therefore, three methodological tools were designed to gather data, namely separate interview schedules for the three sampled groups of people. These research tools gathered in-depth oral testimonies in order to understand the lived experiences of the social actors within their socio-economic and political context. This research contends that reality is socially constructed and that there are multiple realities as people with different world views and experiences construct their own separate understandings of reality (Ohman, 2005; Denzin and Lincoln, 2011). This ontological assumption of constructivism is important for this study since it seeks to understand the social actors' diverse experiences with HIV and AIDS and water scarcity and variability in their particular structural contexts. However, the interrogation of how the structural context influences the everyday reality of the households in the Nyamakate area allows for a critical approach, which uncovers the political and economic power relations operating globally and nationally which are embedded in everyday realities.

Before discussing the household experiences, it is important to understand the contextual structures that shape the construction and re-construction of reality by social actors in the Nyamakate resettlement area. The Zimbabwean political economy has been swinging from populist to neo-liberal policies (Sachikonye, 2002; Raftopoulos, 2006), and consequently, the economic and development performance of the country respond to these shifts and depend on the policies of the day. From 1980 to 1989, the government, under Mugabe, aimed to resettle the black people in order to decongest the Tribal Lands and promote black empowerment (Moyo, 2001). The government was assisted by NGOs and the British government (Brett, 2005). The results show that the Nyamakate community benefited from this policy since people were resettled in the area. At the time, the government's policy was pro-rural development and electricity; a shopping centre, boreholes, roads, schools and a clinic were developed in the Nyamakate area. Evidence shows that Nyamakate households were able to cope at this time with perturbations like droughts because of the structural support that was available.

In 1990, the government adopted a structural adjustment programme which is informed by neo-liberal discourse. The government reduced public spending on social services including some of the main sectors such as health, water, sanitation and roads (Bhalla, *et al.,* 1999; Brett, 2005). The cutting of social services funding resulted in international development agencies, such as DERUDE, discontinuing their operations due to lack of funds. Rural clinics, such as the Nyamakate clinic, were negatively affected and the provision of drugs, the supply of medical equipment and the maintenance of infrastructure became neglected (ZHDR, 2003). The decline in the health services in the 1990s coincided with the rapid increase in the HIV and AIDS pandemic (ZHDR, 2003). However, there were three severe droughts in the 1990s, and the findings of the study show that emergency relief NGOs did intervene and provide assistance on these specific occasions. Thus, while NGOs did discontinue operations in the 1990s, they rallied when there was a disaster.

Scholars are not in agreement as to what caused the political and economic crisis in Zimbabwe that commenced from 2000 to date (Raftopoulos, 2006; Bond, 2007). A succession of perturbations and the government's responses to them defined the contours of the political and economic crisis that characterised the 2000s (Bond, 2007). The currency weakened against the United States dollar at a fast rate; in 1997, Z$12 exchanged to US$1 and 2001 Z$300 exchanged to US$1 (Moyo, 2002). The country experienced hyper-inflation and the economy crashed by about 62.6% between 1999 and 2008, rendering the government financially bankrupt (Makochekanwa, 2009). On the political side, the ZANU-PF government was threatened by the rising popularity of MDC as the opposition, and used the economic crises to gain popularity (Addison and Laako, 2003). The government shifted to a more populist policy and promoted the fast track land reform as a political tool to win elections. At this time, black people violently grabbed white owned land. Aid was withdrawn which severely affected the NGO programmes in the rural areas where the majority of the poor live (De Visser, *et al.,* 2010). Attempts by NGOs to gain access to help rural communities such as the Nyamakate community became difficult since permission had to be sought and the screening process for access was politically motivated. Furthermore, by this stage, the government had empowered the Chiefs who were then supporting government policy even if it meant ignoring traditional norms (Makwerere and Madonga, 2012).

In line with the government's policy regarding traditional leaders, Chief Chundu was appointed to preside over the Nyamakate area which caused much conflict as he was traditionally not meant to be the leader. The historical evidence shows that the Matemai people are those who historically should govern the Nyamakate area and not Chief Chundu. Thus it is evident that the national crisis, as well as the limited government and NGO support to the Nyamakate community, has moulded the experiences of HIV and AIDS and water scarcity and variability by the Nyamakate resettlement households.

In order to understand household member experiences of, responses to, and interpretations of the impacts of HIV and AIDS within the household and the community, the study provides 12 themes which provide an understanding of the impacts of HIV and AIDS in the Nyamakate communities. These are: high levels of death, the increase in orphans and vulnerable children, the increase in the incidence of sick people, care giving problems, the prolongation of human life with anti-retroviral drugs, the decrease in labour for community projects, prostitution, the interruption of community projects, changes to customary practices, the prevalence of more aged than young people, the spreading of opportunistic infections and diseases like diarrhoea, the confusion of HIV and AIDS related illness with witchcraft, and negative effects on family growth. The themes demonstrate the diversity of the impacts of HIV and AIDS at the household and at the community level. The themes also point to the embeddedness of the societal structures in everyday life and which increase the vulnerability of affected households (Mayer, 1996; Kalipeni and Oppong, 1998; King, 2010; 2012). However, it must be noted that the community impacts of HIV and AIDS obscure the different realities of the disease at the individual or household level (King, 2012).

The experiences of HIV and AIDS are felt most directly at the household level in the Nyamakate community. Out of the 40 sampled households, two groups (13 affected and 7 indirectly affected households) reported their livelihoods being impacted by HIV and AIDS. It was reported from the household interviews that HIV and AIDS affects households in three major ways, namely: abandonment a sick person who then had to be cared for by the maiden family, the burden of care and financial impacts. A few (15%) of the affected households claimed minimal impacts from HIV and AIDS because the households were relatively wealthy. The financial impacts of HIV and AIDS on the households included: loss of

productive labour time and assets, modified budgets, changing priorities and increased expenditure. Most of these financial impacts have been documented in quantitative studies on the impacts of HIV and AIDS[73]. The results of this study show that household financial priorities shifted from other requirements to health as a result of HIV and AIDS. Analysis of the findings also indicates that HIV and AIDS are affecting the household structure. Most of the affected households were multi-generational, characterised by predominantly aged and young people. This is significant because the household structure has an influence on care giving and household financial status. The findings show that affected households do get help from the local clinic. Although further assistance is offered by NGOs, it was reported that this assistance was sporadic and very few people benefitted.

In interpreting the households' experiences of HIV and AIDS and water scarcity and variability, the gender biases of the impacts of these perturbations are considered. The results from this study demonstrate that women carry a heavier burden of HIV and AIDS than men. The burden of accessing water was shared between men and women, though the latter assumed the role of fetching water when it is found at a distance. The social structure through culture created and maintained the gender roles that made women subservient. Culture defines the gender roles of women as including caregiving and fetching water for the household (Connell, 1987; Wingood and Di Clemente, 2000). Yet these two issues are central in the experience of care giving in the context of AIDS and water scarcity and variability. Thus, the burden of care giving limited women from engaging in productive or non-productive activities.

This study analyses individual and household experiences of, responses to, and interpretations of the impacts of water scarcity and variability. In discussing the households' experiences of water scarcity and variability, attention is drawn to power relations that inform the access and usufructs rights to water resources. The water resources considered in this study are rivers, underground water (drawn through boreholes and wells) and rainfall. The findings show that water resources are declining. Participants narrated their perceptions of the causes of water scarcity and variability in the Nyamakate area, and these can be categorised

[73] These studies have been reviewed in Chapter Two.

as follows: spiritual, direct human induced reasons, and natural changes in water resources - climate change. Access to water resources is limited due to the following reasons: borehole breakdowns, dry rivers, decreasing and erratic rainfall, low ground water table, limited access to the game park, privatisation of boreholes and wells and the introduction of charging for the utilisation of community boreholes.

National laws set up the framework for water use and management in the country. Findings show that customary and Borehole Committee rules regulate access and use of water in the Nyamakate community. Although custom stipulates that water should be freely accessed by everyone, it was noted that people employ different strategies to limit access to water by others. Households experience water scarcity and variability with minimal support from regional and national institutions.

The study reveals that the government and NGOs invested in the water sector prior to 1990. The period after 1990, government policy changed as it adopted the neo-liberal Economic Structural Adjustment Programme (Bhalla, *et al.,* 1999; Mawowa, 2008). NGOs periodically assist in the water and sanitation sector in the Nyamakate community, however, this assistance has not been sustained since NGOs operate for a short period and then leave the Nyamakate area. The programmes implemented institute 'quick-fix' solutions to water scarcity, which has resulted in sub-standard deep wells being dug which have failed to resolve the water shortage problem in Nyamakate. After 1990 to date, only 35 deep wells were constructed by an NGO called Mvura/Manzi. Most of these deep wells were not functional because of the following reasons: the well was dug on a temporary water table, it was not protected or it was partially dug and abandoned.

In order to understand the relationship of HIV and AIDS and water scarcity and variability, the evidence related to both water scarcity in the study area and the impact of HIV and AIDS on households is drawn together. The results of the study demonstrate that HIV and AIDS compromises the ability of affected households to access water resources. For example, people who were sick from transmittable opportunistic infections, such as Tuberculosis (TB), are stigmatised at the water points. Furthermore, the washing of soiled linen by HIV and

AIDS affected households close to the borehole is scorned since people are disgusted by this practice. Some affected households had to wash soiled linen from the community water point in the night. Access to water by HIV and AIDS affected households is also limited by Shona cultural practices, particularly the custom not leaving a bedridden person unattended. However, the effect of these local cultural norms and values do depend on the household structure. If a household has other members who can take care of the patient while the primary carer goes to fetch water, then HIV and AIDS had no limiting impacts on the ability of the household to access water. In cases where the care giver was the only adult member of the household, HIV and AIDS has a limiting effect on the household's access to water. These caregivers would have to either pay someone to do this for them or rely on their social networks. In the past, NGO supported programmes, such as the Community Home-Based Care, used to provide community volunteers to assist in caring for an ill person. These programmes stopped in the Nyamakate area due to the withdrawal of the NGO that was supporting them, namely Kariba AIDS Project.

On the other hand, water scarcity and variability also impacts the HIV and AIDS affected household in the Nyamakate area. This study demonstrates that affected households have higher water deficits. HIV and AIDS affected household used an average of 145 litres per day, while their average demand was 248 litres per day. While unaffected and indirectly affected households have an average demand of 192.5 litres per day and use 106.25 litres per day. In the upland area, water is being rationed per household and this compromises hygiene standards of the affected households. HIV and AIDS affected households' demand for water is high due to the increase in the need to wash linen and clothes, cook, bath the patient and wash the utensils used by the patient. Poor conditions of sanitation and hygiene due to a lack of water expose people to diseases. In the case of HIV positive people, these diseases become opportunistic infections which then speed up their progression from HIV to full blown AIDS (Lewis, 2005; Bhasin and Nag, 2011). Water scarcity and variability impacts the maintenance of acceptable levels of hygiene in the HIV and AIDS affected households (Bhasin and Nag, 2011).

The study demonstrates that the Nyamakate community members use unprotected wells as alternative water sources. The use of unsafe water is higher in the highland area because there

are only the two seasonal functioning boreholes and the distant to the Rukomeshe River. In the event of these unprotected water sources being contaminated, this could lead to an epidemic. Zimbabwe has been victim to diarrheal outbreaks after contamination of water sources (King, 2010). The 2008 cholera outbreak infected about 12 000 people and there were 560 deaths (King, 2010).

The local actors who are confronted with the challenges of HIV and AIDS and water scarcity and variability then resort to developing coping mechanisms in order to secure a livelihood. Evidence shows that the Nyamakate households adopt eight strategies to cope with water shortage. These are: fetching water from neighbouring village, digging deep wells, fetching water from shallow wells, waiting for the water level to rise in the borehole, cutting down on water uses, fetching water early in the morning, harvesting rain water and waiting for assistance from donors. The Nyamakate households adopt four major strategies in order to cope with the burden of HIV and AIDS, being: selling of livestock, vegetable gardening and marketing, borrowing money from friends and petty trading. Coping with livelihoods pressures was easier between 1980 and 1990 since the Nyamakate community was assisted by NGOs and government. This period also coincides with lower levels of HIV and AIDS incidence since the first case of HIV and AIDS in Zimbabwe was reported in the mid-1980s (ZHDR, 2003). The collapsing state (from the adoption of liberal policies and the subsequent adoption of fast track land reform) coincided with increasing rates and a heavier burden of HIV and AIDS. This has made it difficult for the Nyamakate households to cope with the impacts of HIV and AIDS and water scarcity and variability.

Evidence shows that affected households experience difficulties in coping with water scarcity and variability. The affected households use different strategies in order to cope with HIV and AIDS and water scarcity and variability and these strategies were determined by household structure, the intensity of social networks and the patient's condition. HIV and AIDS affected households experience a reduction in labour mainly due to the burden of caring for a patient and, furthermore, because an ill person can no longer work. Thus, the number of able bodied people to share in the care giving, income generating activities and harvesting of natural resources, such as water, determined the ability of the household to cope with HIV and AIDS. As noted previously, there was no Home-based Care Programme in the

Nyamakate area as the NGO running the programme ceased operations in the area. Some households composed of the caregiver and minors have to fetch water when the patient is sleeping, and this could mean going to the water point during the night. Cultural norms and values scorn leaving a patient unattended when they are very ill, hence this complicates the coping strategies adopted by affected households. These issues also have a bearing on the quantity and quality of water an affected household can access.

The findings of this study supports scholars who critique the discourse of 'coping', since the affected households engage in asset eroding activities in order to deal with the impacts of HIV and AIDS and water scarcity and variability, which suggests they are not coping (Rugalema, 2000; Goudge, 2007; Masanjala, 2007; Ansell, 2009; Davies, 2010). Some of the coping mechanisms used by the Nyamakate households' to cope with HIV and AIDS and water scarcity and variability reduce the households' livelihood assets (financial, human, physical, natural and social), rendering it vulnerable into the future.

The contribution of this study to the theory of the political ecology of health lies chiefly in the presentation of a case study of the dialectical relationship between health (especially HIV and AIDS), ecology and socio-political systems in sub-Saharan Africa. Such studies are important since there is evidence that neither health nor ecology are apolitical concepts (Kalipeni and Oppong, 1998; King, 2010; Morris, 2012). This thesis argues that the negotiation of health issues at the local level is political, as is shown by the experience of the impacts of HIV and AIDS by the Nyamakate household. The household's experiences of HIV and AIDS are influenced by policy decisions made at the national and even at the global level. It has been theorised that the governments response to HIV and AIDS follows the same pattern as other governments: denial, complacency or a *laissez faire* attitude, followed by panic, and finally acceptance (ZHDR, 2003). Policies adopted by government and donors and the time they take to implement them, directly impact on how the household experiences the impacts of the pandemic (Barnett and Blaikie, 1992; ZHDR, 2003; King, 2010). In Zimbabwe, the HIV and AIDS policy and research focus was initially biomedical, and then became multi-sectorial, after the failures and the socio-economic impacts of the policies were realised (ZHDR, 2003).

The HIV and AIDS pandemic affected households in the Nyamakate resettlement area in terms of water scarcity and variability in diverse ways. The study found out that their experiences were shaped by a number of factors and conditions that range from the local to the global level, such as: household structure, social networks, political and economic situations and decisions at the national level and changes in donor programmes on HIV and AIDS at the global level. HIV and AIDS complicates the ability of affected households to access water resource due to reduced labour available to fetch water and the long distances that caregivers or their helpers have to walk in order to fetch water. Another dimension of the local reality is that, with the advent of antiretroviral drugs, it is reported that these are facilitating HIV and AIDS positive people to do normal daily activities on their own, including the fetching of water.

On the other hand, declining water resources also puts pressure on the HIV and AIDS affected households. It is documented that water resources in the Nyamakate area, as in the rest of the Zambezi Valley, is decreasing (Magadza, 2010). Such water scarcity compromises the quality of care that carers are able to give to an HIV and AIDS patient, as the demands of these households are higher than those in unaffected households.

In conclusion, the actors' experiences, responses to and interpretation of the impacts of HIV and AIDS and water scarcity and variability are shaped by the societal structures in which the Nyamakate community is embedded. Both HIV and AIDS and water scarcity and variability have negative impacts on the livelihoods of the affected households in the Nyamakate area. The household structure, household social networks and societal structure together determine the household's experiences of HIV and AIDS. Water scarcity and variability in the Nyamakate area is not only because of the physical decrease of water, but was also caused by breakdowns of the pumps, and resulting in higher demands than can be supplied with the inadequate technology. Water scarcity and variability is higher amongst HIV and AIDS affected households since they have a greater water deficit per household. Furthermore, some of the HIV and AIDS affected households fetch water from unprotected sources, as these are used as alternatives to the boreholes. Thus, most HIV and AIDS affected households are not coping with water scarcity and variability as evidenced by the environmental and health risks that coping mechanisms adopted. The lack of adequate institutional support exacerbates the

vulnerability in the Nyamakate community, hence affected actors are left to their own means to devise strategies for accessing adequate water. Thus, there is dialectic between HIV and AIDS households putting pressure on water sources, and at the same time water shortages and variability impacting the reproductive and productive needs for water by households. This dialectic has resulted in a nuanced set of understandings, experiences, local norms and institutions for regulating and ordering the access and use of water by HIV and AIDS households.

The study shows that conceptualising the relations between societal power relations, health and environment through the adoption of a post-structural political ecology approach provides for a more critical understanding of the determinants of health experiences and outcomes. The policy implications of the findings of this case study point to government and NGOs designing policies which incorporate such understandings of the interaction of HIV and AIDS with the environment so that multi-institutional responses to addressing the livelihood problems of the rural population can be developed.

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APPENDICES

Appendix 1 List of study participants, date of participation and location of interview or designation for the stakeholder interviews.

Study Id no// (Interview)	*Sampling category*	*Date of interview*	*Village/designation*
1	Unaffected Household	12/09/2011	Village 25
2	Affected Household	13/09/2011	Village 25
3	Affected Household	13/09/2011	Village 25
4	Indirectly affected Household	14/09/2011	Village 25
5	Unaffected Household	15/09/2011	Village 25
6	Unaffected Household	16/09/2011	Village 25
7	Unaffected Household	19/09/2011	Village 25
8	Affected Household	19/09/2011	Village 25
9	Affected Household	20/09/2011	Village 25
10	Unaffected Household	22/09/2011	Village 25
11	Unaffected Household	22/09/2011	Village 27a
12	Unaffected Household	23/09/2011	Village 27a
13	Not affected Household	23/09/2011	Village 27a
14	Unaffected Household	27/09/2011	Village 27a
15	Unaffected Household	27/09/2011	Village 27a
16	Affected Household	28/09/2011	Village 27a
17	Affected Household	28/09/2011	Village 27a
18	Unaffected Household	29/09/2011	Village 27a
19	Unaffected Household	29/09/2011	Village 27a
20	Indirectly affected Household	30/09/2011	Village 27a
21	Affected Household	14/10/2011	Hotel village
22	Affected Household	14/10/2011	Hotel village
23	Unaffected Household	15/10/2011	Hotel village
24	Affected Household	15/10/2011	Hotel village
25	Unaffected Household	16/10/2011	Hotel village
26	Unaffected Household	16/10/2011	Hotel village
27	Affected Household	17/10/2011	Hotel village
28	Unaffected Household	21/10/2011	Hotel village
29	Indirectly affected Household	22/10/2011	Hotel village
30	Indirectly affected Household	22/10/2011	Juliet village
31	Affected Household	23/10/2011	Juliet village
32	Affected Household	23/10/2011	Juliet village
33	Unaffected Household	24/10/2011	Juliet village
34	Indirectly affected Household	28/10/2011	Juliet village
35	Unaffected Household	29/10/2011	Juliet village
36	Unaffected Household	30/10/2011	Juliet village
37	Indirectly affected Household	11/11/2011	Juliet village
38	Unaffected Household	12/11/2011	Juliet village
39	Indirectly affected Household	12/11/2011	Juliet village
40	Affected Household	14/11/2011	Juliet village
41	Key community informant	13/06/2011	Village 24a
42	Key community informant	16/06/2011	November village
43	Key community informant	22/06/2011	Village 24a

44	Key community informant	23/08/2011	Mike
45	Key community informant	23/08/2011	Alpha village
46	Key community informant	24/08/2011	Juliet village
47	Key community informant	24/08/2011	Kilo village
48	Key community informant	27/08/2011	Tango village
49	Key community informant	30/08/2011	Bravo village
50	Key community informant	30/08/2011	Charlie village
51	Key stakeholder	05/12/2011	Health worker
52	Key stakeholder	05/12/2011	Health worker
53	Key stakeholder	07/12/2011	Local government official
FGI 1	Focus Group Interview	24/11/2011	India village
FGI 2	Focus Group Interview	24/11/2011	Sierra village
FGI 3	Focus Group Interview	26/11/2011	Charlie village
FGI 4	Focus Group Interview	01/12/2011	Charlie village
FGI 5	Focus Group Interview	02/12/2011	Echo village
FGI 6	Focus Group Interview	08/12/2011	Echo village
FGI 7	Focus Group Interview	08/12/2011	Golf village
FGI 8	Focus Group Interview	09/12/2011	Golf village

Appendix 2 The interview guide used in data collection for the key community informants.

The relationship between HIV and AIDS and water resources scarcity in Nyamakate households in the context of the political and economic crisis in Zimbabwe: a political ecology approach.

Interview Schedule A: key community informants interview schedule

Consent Note

Good day, my name is Alexio Mbereko and I am a PhD student with the School of Development Studies at the University of KwaZulu-Natal. I am doing a study in Nyamakate area that aims to understand how households experience, respond to, and interpret the complex impacts of HIV and AIDS, and water resources scarcity. The study is being supervised by Prof Dianne Scott of the school of Development Studies. It is my hope that the information generated from this study will be used in the thesis and helps improve the understanding of the relationship between HIV and AIDS and water resources scarcity and change. Furthermore, the information will be useful to development agencies in the area in designing development programs.

Confidentiality of information will be maintained at all times. Your identity or that of your institution will be protected and anonymity maintained. The information you provide will be combined with that of others in the area who I am interviewing, hence it cannot be traced back to you. Tapes of interviews and transcribed material will be kept safe at all times by the researcher.

The study does not include any material that is unsafe to health and the high level of confidentiality will ensure your social safety.

Please would you be willing to answer some questions that will provide me with information for the study. Your honest answers to the questions will help us better understand your experiences of, responses to, and interpretation of the complex impacts of HIV and AIDS and water resources scarcity and change. If at any point you wish to stop answering the questions, feel free to let me know and we will stop the interview. The interview will take about 1hour, 30minutes. Should you agree to participate on the basis of having read and understood the nature and conditions of this research study, please sign the designated section below.

PARTICIPANT DECLARATION

I …….. (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project and I consent to participate in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Signature:……. Date:……..

Section A: Resettlement Profile

1. Describe the resettlement process in the Nyamakate area and provide dates for key events. Who became the dominant group and why?

2. Who came to control water resources in Nyamakate at the time of resettlement and why?

Section B: Historical data on water resources

1. Can you describe the state of water resources when you first came to stay in Nyamakate? (state year)
2. Have you noticed/become aware of any changes in water supply in the Nyamakate area? If yes, describe in detail theses changes that you have noticed?

3. In what way have these changes in water supply affected Nyamakate households in terms of;

    a. Access to water sources

    b. Amount of water available

    c. Quality of the water

    d. Aquatic animals (e.g. fish and frogs) and vegetation (edible plants and reeds) that benefit the community members

4. What do you think is causing these changes in water supply?

5. What are household members saying or doing about changes in water supply?

6. What measures are Nyamakate households taking to deal with these changes in water supply?

7. Describe how the broader community is working together to deal with the changes in water supply.

Section C: Dynamics of Access to water resources

8. How was access to water resources organised and contested in the past? (give date)
9. Are there any changes in access arrangements to water resources since that time and what is causing the changes?
10. Who regulates access to water resources by households within Nyamakate?
11. How is access to water regulated?
12. Which customary or legal laws affect community's ability to access and benefit from water resources?

Section D: Institutional dynamics

13. Which external institutions did the Nyamakate community interact with when you first settled in this area? (dates)
14. What was the nature of the relationship of the community with each one of the institutions?
15. What are the changes in the assistance communities receive from institutions since you settled in Nyamakate?
16. Name the main institutions operating in the area now and what support they give communities (health, education etc)

Section E: Respondent's Profile

Socio-economic data			
1.	What is your gender?	1. Male	2. Female
2.	How old are you?		
5.	What is your highest level of education?	1. Never been to school 2. Primary 3. Secondary 4. High school 5. Certificate 6. Diploma 7. Degree	

6.	What is your occupation?	
7.	What position do you hold in the Nyamakate community?	

17. When did you start staying in Nyamakate and what attracted you to this area (Probe for push and pull factors)?

Appendix 3 The interview schedule used to gather data amongst households.

The relationship between HIV and AIDS and water resources scarcity in Nyamakate households in the context of the political and economic crisis in Zimbabwe: a political ecology approach.

Interview Schedule B: Structured interview schedule for household heads

Consent Note

Good day, my name is Alexio Mbereko and I am a PhD student with the School of Development Studies at the University of KwaZulu-Natal. I am doing a study in Nyamakate area that aims to understand how households experience, respond to, and interpret the complex impacts of HIV and AIDS, and water resources scarcity. The study is being supervised by Prof Dianne Scott of the school of Development Studies. It is my hope that the information generated from this study will be used in the thesis and helps improve the understanding of the relationship between HIV and AIDS and water resources scarcity and change. Furthermore, the information will be useful to development agencies in the area in designing development programs.

Confidentiality of information will be maintained at all times. Your identity or that of your institution will be protected and anonymity maintained. The information you provide will be combined with that of others in the area who I am interviewing, hence it cannot be traced back to you. Tapes of interviews and transcribed material will be kept safe at all times by the researcher.

The study does not include any material that is unsafe to health and the high level of confidentiality will ensure your social safety.

Please would you be willing to answer some questions that will provide me with information for the study. Your honest answers to the questions will help us better understand your experiences of, responses to, and interpretation of the complex impacts of HIV and AIDS and water resources scarcity and change. If at any point you wish to stop answering the questions, feel free to let me know and we will stop the interview. The interview will take about 3 hours. Due to the length of the interview, we will conduct the interview in two sessions at your convenience. Should you agree to participate on the basis of having read and understood the nature and conditions of this research study, please sign the designated section below.

PARTICIPANT DECLARATION

I …….. (Full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project and I consent to participate in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Signature:……. Date:……..

Section A: Structure of the household

1. How many people live in this household on a permanent basis?
2. Can you indicate who are the members of the household and their ages?(Add at back of page and continue numbering if there are more)
3.

	Household member	Tick if present	Tick if lives & works elsewhere	Age (Yrs)
1	Grandfather			
2	Grandmother			
3	Father			
4	Mother			
5	Daughter			
6	Daughter			
7	Daughter			
8	Daughter			
9	Son			
10	Son			
11	Son			
12	Son			
13	Grandchild (son/daughter of ……)			
14	Grandchild (son/daughter of ……)			
15	Grandchild (son/daughter of ……)			
16	Grandchild (son/daughter of ……)			
17	Other*, Specify			
18	Other, Specify			
19	Other, Specify			
20	Other, Specify			
*For example, mother's sister; mother's sister's child; orphaned children taken in etc				

4. Who is the head of household? (Write down number from above table)

5. How many people live and work elsewhere and come home monthly or annually? (Indicate which members according to household profile in question two above)

Section B: Household livelihoods (baseline information)

6. What contribution in cash or kind does each household member make to support the household?

7.

Household member ID	Household member	*Cash per month (cash)/Contribution in kind	**Work/activity that generates the contribution
1	Grandfather		
2	Grandmother		
3	Father		
4	Mother		
5	Daughter		
6	Daughter		
7	Daughter		
8	Daughter		
9	Son		
10	Son		
17	Other*, Specify		
18	Other, Specify		
19	Other, Specify		
20	Other, Specify		
* E.g. R200 or grows vegetables for subsistence; collects firewood for cooking ** E.g. sells cash crop; makes & sells traditional baskets; grows & sells spinach; repairs shoes; sends back money every month; buys school uniforms & pays school fees for children			

8. Are there other relatives not part of the household that assist the household? (What is the assistance offered and how significant is it to the household's livelihood?)

9. Who else assists the household to make a livelihood? E.g. neighbors, church, friends etc (what is the assistance offered and how significant is it to the household's livelihood?)

10. What are the skills/educational level of each one of the household members? (baseline information)

	Household member	Skills level *	How do these skills assist the household's livelihood
1	Grandfather		
2	Grandmother		
3	Father		
4	Mother		
5	Daughter		
6	Daughter		
7	Daughter		
8	Daughter		
9	Son		
10	Son		
11	Son		
12	Son		
13	Grandchild (son/daughter of ……)		
14	Grandchild (son/daughter of ……)		
15	Grandchild (son/daughter of ……)		
16	Grandchild (son/daughter of ……)		
17	Other*, Specify		
18	Other, Specify		
19	Other, Specify		
20	Other, Specify		
* this includes skills gained outside formal institutions			

Section C: Households experiences of the impacts of HIV and AIDS.

11. In your opinion, how has HIV and AIDS broadly impacted on the Nyamakate community?

12. To what extent would you say that this is the commonly held view within the community?

13. Describe how HIV and AIDS have affected your household either directly, or indirectly and over what period? Give examples. Tell me a story about some of the experiences of the household

14. What changes has this made to the income/ livelihood of this household? Refer back to answers on household profile in sections A and B)

15. Which household members have been the most affected by HIV and AIDS in the household and how? (Give examples Refer to the list of household members outlined in section A).

16. What measures/actions is the household taking to deal with these impacts? (Give examples of these measures)

17. Which household members are working to deal with HIV and AIDS impacts and what are they doing?

18. What in your opinion are the main impacts of HIV and AIDS experienced by the family?

19. In what way does HIV and AIDS in the household increase or decrease the need for water used in the household. (Give examples)

20. How important is water for those members of the household who are suffering from HIV and AIDS?

Section D: The impacts of water resources change and scarcity on livelihoods (baseline information)

21. What are the main natural resources that the household collect in order to sustain your livelihood?

	Natural Resource (English name)	Natural Resource (Shona name)	Use
1			
2			
3			
4			
5			
6			
7			
8			
9			
10			

22. Where do you get your water supplies for the household?

23. How does this vary throughout the year – are there different sources?

24. Who is responsible for fetching water every day?

25. How much water is used every day? (Measure by Buckets)What do you use the water for?

26. Have you noticed/become aware of any changes in water supply in the Nyamakate area? (Give reasons).

27. When did you notice these changes starting to happen?

28. Describe in detail these changes in water supply that you have noticed?

29. In what way have these changes affected your household in terms of the;

    a. Source of your water

    b. Amount of water available

    c. Quality of the water

    d. Access to aquatic animals (like fish and frogs) and vegetation

30. What do you think is causing the changes?

31. What are other community members saying or doing about changes in water supply?

32. What measure(s) is your household taking to deal with these changes in water supply?

33. How do you feel about the changes in water supply – what does this mean to your household?

34. What are you yourself doing to overcome these challenges?

35. Describe what way the broader community is working together to deal with the changes in water supply.
36. What assistance is government providing to your household?
37. Do households with HIV and AIDS get special privileges regards water issues?

Section E: Power relations and patterns of access and usufruct rights to water resources.

38. Who regulates access to water resources in Nyamakate?
39. How is access to water regulated?
40. Which customary or legal laws affect your ability to access and benefit from water resources?
41. Which water resources do you have access to?
42. How did you gain the access rights to those water resources units?
43. Is the way you gained access rights typical to everyone in Nyamakate area?
44. If not everyone has the same access to water resources in the area, how do those with less access feel and respond to their position?
45. How do you respond to these different levels of access to water?
46. Are there differences in accessing water resources for widows and orphans as compared to male headed households (probe for cultural norms)?
47. Do you access water resources in the adjacent National Parks area?
48. Is this use legal or illegal?
49. How do you feel about accessing water resources in the National Parks protectorate?
50. Have you changed your sources over time? Explain
51. What are the five main uses of water in your household?

Section F: Relationship between HIV and AIDS and Water scarcity and change

52. How does the incidence of HIV and AIDS hinder households from accessing and benefiting from water resources?
53. Does being an HIV affected household create a need for more water and in what way?
54. How does water scarcity affect HIV and AIDS affected households?
55. In what ways does HIV and AIDS affected households cope with the problem of water shortage?

Section G: Support rendered to the community by civil and public institutional (partly baseline)

56. Which external institutions are operating within Nyamakate? (state, NGO or civil society organisation)

57. Describe the state of these organisations?
58. What kind of assistance do you get from these institutions? In the past and now?
59. What are the three main problems that you need help with from civil and civic institutions?

Section H: Respondent's Profile Turn these into questions.

100 Socio-demographic data			
1.	What is your gender?	1. Male	2. Female
2.	How old are you?		
3.	What is your marital status	1. Single not cohabiting 2. Single cohabiting 3. Married 4. Widow/divorced not cohabiting/remarried 5. Widowed/divorced cohabiting/remarried	
4.	What is your highest level of education	8. Never been to school 9. Primary 10. Secondary 11. High school 12. Certificate 13. Diploma 14. Degree	
5.	What is your occupation		

Appendix 4 The interview schedule used to gather data from key stakeholders.

The relationship between HIV and AIDS and water resources scarcity in Nyamakate households in the context of the political and economic crisis in Zimbabwe: a political ecology approach.

Interview Schedule C: Structured interview schedule for Stakeholders

Consent Note

Good day, my name is Alexio Mbereko and I am a PhD student with the School of Development Studies at the University of KwaZulu-Natal. I am doing a study in Nyamakate area that aims to understand how households experience, respond to, and interpret the complex impacts of HIV and AIDS, and water resources scarcity. The study is being supervised by Prof Dianne Scott of the school of Development Studies. It is my hope that the information generated from this study will be used in the thesis and helps improve the understanding of the relationship between HIV and AIDS and water resources scarcity and change. Furthermore, the information will be useful to development agencies in the area in designing development programs.

Confidentiality of information will be maintained at all times. Your identity or that of your institution will be protected and anonymity maintained. The information you provide will be combined with that of others in the area who I am interviewing, hence it cannot be traced back to you. Tapes of interviews and transcribed material will be kept safe at all times by the researcher.

The study does not include any material that is unsafe to health and the high level of confidentiality will ensure your social safety.

Please would you be willing to answer some questions that will provide me with information for the study. Your honest answers to the questions will help us better understand your experiences of, responses to, and interpretation of the complex impacts of HIV and AIDS and water resources scarcity and change. If at any point you wish to stop answering the questions, feel free to let me know and we will stop the interview. The interview will take about 1hour, 30minutes. Should you agree to participate on the basis of having read and understood the nature and conditions of this research study, please sign the designated section below.

PARTICIPANT DECLARATION

I …….. (full names of participant) hereby confirm that I understand the contents of this document and the nature of the research project and I consent to participate in the research project. I understand that I am at liberty to withdraw from the project at any time, should I so desire.

Signature:……. Date:……..

Section A: Association of HIV and AIDS and water resources scarcity and change

1. Are there differences in the way HIV affected and non-affected households access water resources in Nyamakate area?
2. Does HIV and AIDS hinder households from accessing and benefiting from water resources? (can you explain your answer)

3. How does HIV and AIDS affected households' struggle with other households to access water resources?

4. Are there any differences in the way HIV and non-HIV affected households compete for water resources in Nyamakate?

5. How does being an HIV affected household create a need for more water and in what way?

6. How does water scarcity affect HIV and AIDS affected households?

7. In what ways do HIV and AIDS affected households cope with the problem of water shortage in Nyamakate?

Section B: Support rendered to Nyamakate by civil and public institutional

8. Does your institution address issues of HIV and AIDS or/and natural resources in your programmes? What is the reason for dealing or not dealing in the two areas?

9. Name all the organisations (state and community) operating in this area, what they do, how they are funded and any recent changes in support and why?

10. What is the nature of your organisation's relationship with households within Nyamakate area?

11. What support does your institution render to households in Nyamakate?

12. What support does your institution render to households affected by HIV and AIDS and water resources scarcity?

13. How frequent do you render the support to HIV affected and water scarce households?

14. How has the assistance offered to households in Nyamakate changed from the time you were resettled here?

15. In what ways do households in Nyamakate cope with impacts from HIV and AIDS and water resources scarcity without your organisation's assistance?

16. What is your institutions view on the experiences, interpretation and responses of people in Nyamakate to HIV and AIDS?

17. What is your institutions view on the experiences and responses of people in Nyamakate to changes in water resources?

18. Does your organisation recognise the household's experiences with HIV and AIDS in designing and implementing support programmes to assist the community?

19. What are the constraints that your institution experiences in your operations in Nyamakate?

20. What relations have you observed between the changes in water resources and HIV affected households in Nyamakate? How has each affected the other?

Section C: Respondents profile

Socio-demographic data			
1.	What is your gender?	1. Male	2. Female
2.	How old are you?		
4.	What is your highest level of education?	15. Never been to school 16. Primary 17. Secondary 18. High school 19. Certificate 20. Diploma 21. Degree	
6.	What is your occupation		
7.	How long have you lived in this area? (Years and since what date?)		

Appendix 5 The schedule used to gather data from focus group participants

Section A: Households experiences of the impacts of HIV and AIDS.

60. In your opinion, how has HIV and AIDS broadly impacted on the Nyamakate community?
61. In what way does HIV and AIDS in the household increase or decrease the need for water used in the household. (Give examples)

Section B: The impacts of water resources change and scarcity on livelihoods

62. How important is water for those members of the household who are suffering from HIV and AIDS
63. What are the main natural resources that the household collect in order to sustain their livelihood?
64. Where do you get your water supplies for the household?
65. How does this vary throughout the year – are there different sources?
66. Have you noticed/become aware of any changes in water supply in the Nyamakate area? (Give reasons).
67. Describe in detail these changes in water supply that you have noticed?
68. In what way have these changes affected households in terms of the;
    e. Source of your water
    f. Amount of water available
    g. Quality of the water
    h. Access to aquatic animals (like fish and frogs) and vegetation
69. What do you think is causing the changes?
70. Describe what way the broader community is working together to deal with the changes in water supply.
71. Do households with HIV and AIDS get special privileges regards water issues?

Section C: Power relations and patterns of access and usufruct rights to water resources.

72. Who regulates access to water resources in Nyamakate?
73. How is access to water regulated?
74. Which customary or legal laws affect your ability to access and benefit from water resources?
75. Are there differences in accessing water resources for different members of the community?
76. Do you access water resources in the adjacent National Parks area?

77. How do you feel about accessing water resources in the National Parks protectorate?
78. Have you changed your sources over time? Explain

Section D: Relationship between HIV and AIDS and Water scarcity and change

79. How does the incidence of HIV and AIDS hinder households from accessing and benefiting from water resources?
80. Does being an HIV affected household create a need for more water and in what way?
81. How does water scarcity affect HIV and AIDS affected households?
82. In what ways does HIV and AIDS affected households cope with the problem of water shortage?

Section E: Support rendered to the community by civil and public institutional

83. Which external institutions are operating within Nyamakate? (state, NGO or civil society organisation)
84. Describe the state of these organisations?
85. What kind of assistance do you get from these institutions? In the past and now?
86. What are the three main problems that you need help with from civil and civic institutions?

Appendix 6 The Rural District Council consent letter

Appendix six presents the consent letter which approved conducting the research in Nyamakate area which is under Hurungwe Rural District Council.

HURUNGWE RURAL DISTRICT COUNCIL

Head Office
P.O Box 46
Magunje
Telephone: 064-6881/2/3
E-mail: jmoyo@africaonline.co.zw

Karoi Sub Office
P.O Box 281
Karoi
Telephone: 064-6320. 7613/4
Email: hurrdc@mweb.co.zw

Our Ref:

Your Ref TEC- 11/1/11

16 March 2011

MR MBEREKO
University of KwaZulu Natal
Howord College Campus
Durban 4041
SOUTH AFRICA

Dear Sir/Madam

RE: REQUEST FOR CONSENT LETTER FOR RESEARCH PROJECT

Reference to your letter dated 26 January 2011.

Council has no object to your request and you can proceed with your research in the indicated area.

Thank you.

PP

15 MAR 2011

Appendix 7 The ethical clearance letter for the research protocol.

UNIVERSITY OF
KWAZULU-NATAL
INYUVESI
YAKWAZULU-NATALI

Research Office (Govan Mbeki Centre)
Private Bag x54001
DURBAN, 4000
Tel No: +27 31 260 3587
Fax No: +27 31 260 4609
Ximbap@ukzn.ac.za

DATA CAPTURED PG 1
20 JUL 2011

21 June 2011

Mr. A Mbereko (210554291)
School of Development Studies

Dear Mr. Mbereko

PROTOCOL REFERENCE NUMBER: HSS/0349/011D
PROJECT TITLE: The relationship between HIV and AIDS and water resources scarcity in Nyamakate households in the context of the political and economic crisis in Zimbabwe. a political ecology approach.

EXPEDITED APPROVAL

I wish to inform you that your application has been granted Full Approval through an expedited review process:

Any alteration/s to the approved research protocol i.e. Questionnaire/Interview Schedule, Informed Consent Form, Title of the Project, Location of the Study, Research Approach and Methods must be reviewed and approved through the amendment /modification prior to its implementation. In case you have further queries, please quote the above reference number. PLEASE NOTE: Research data should be securely stored in the school/department for a period of 5 years.

I take this opportunity of wishing you everything of the best with your study.

Yours faithfully

.....

Professor Steven Collings (Chair)
HUMANITIES & SOCIAL SCIENCES RESEARCH ETHICS COMMITTEE

cc. Supervisor – Prof. D Scott
cc. Mrs. S van der Westhuizen/Mrs. P Konan

Appendix 8 An account of traditional leadership conflicts

The local government, headed by the District Administrator empowered Chief Chundu to rule over Nyamakate. Chief Chundu died after putting in office village-heads in Nyamakate. His eldest son succeeded him as Chief Chundu and insisted on ruling over Nyamakate as part of the Chundu kingdom. I [A spirit medium] quarrelled with him in a Ward meeting over his claims of being a Chief over Nyamakate. He announced in the Ward meeting that if the people of Matemai clan consume natural resources they will be arrested and imprisoned. I said to him it is better for me to be arrested because government gave you dominion over things on the land not everything. What is below the surface belongs to the ancestors of the land. His response was that Matawu moved all the ancestors' graves. I replied that where did the car take the ancestors' graves, you cannot move ancestors graves. This is why my son Charles was pained by Chief Chundu's attitude. He reacted by reporting the issue to our uncle Chief Dandahwa. Chief Dandahwa has been helping us to reclaim our area back to the Matemai clan. We reported to Dandahwa because he is the one who draw our boundaries and he apportioned part of his kingdom to the Matemai people. We cannot allow a foreign Chief to rule over us and our resources. He is of the Shava-Bere clan, hence he cannot rule over the Matemai family on their land.

In 2003 and 2008 (cannot remember the exact months) lions became a problem in Nyamakate. A local member of parliament bought us a cloth after he found people arguing in a meeting. Some people where blaming Murimbika [A spirit medium possessed by the spirit of Karembera] for bringing the lions, since the lions' coming coincided with his return to Nyamakate. I told Murimbika that you came with the lions. Murimbika in his defence said who saw me bringing lions with a truck and he denied any association with the lions. Murimbika was involved in the construction of the school. Murimbika was a teacher but he was also a spirit medium of Karembera. The Member of Parliament called a meeting in order to understand the conflict. The Member of Parliament bought a piece of cloth and snuff. My elder brother Matiki and I looked for eleven people and we went to Jerami's grave. When we got there Matiki was afraid to offer the cloth and snuff to the ancestors. He grew cold feet because he is from a junior 'house' I come from the senior 'house'. So I conducted the rituals and gave an offering. The cloth stayed for 14 days at the grave yard. Vuti and other surrounding areas realised a good crop harvest but Nyamakate had a poor harvest. I took my son and went to collect the cloth and stayed with it for three days. I went to the highest ancestor's grave, he was called Rinemanyanga-Hariputirwe. People shortened his name to Rinenyanga but this is not his full name. He is the one who looks over and solves all the problems of Hurungwe. The grave is close to Chidzuhwi. His medium is called Nyadohwe.

I took the cloth to Nyadohwe. He questioned me as to why I had collected the cloth from the grave in Nyamakate. I said to him if you know that I am not of the Matemai clan because my mother had me out of prostitution, then deny the cloth. The spirit accused me of being short tempered. I left all the clothes with the spirit medium. This is the situation, currently we are only engaged in the conflict as the Matemai family without outsiders' assistance. According to the Matemai clan, one 'house', cannot be Chiefs twice without other houses first becoming Chiefs. If the Matemai families are fighting over Chieftainship it is better to revert to having a presiding officer.

Chief Chundu has changed his argument. He is still fighting to have Nyamakate under him. He is now arguing that the government should take him to his original kingdom in the Zambezi valley if everything was being reversed to the pre-colonial boundaries. Chief Chundu was moved from the Zambezi valley in 1957/8 to the current location. If lions become a problem in Nyamakate people come to trouble me, so that I can appease the ancestors. The leadership should consult with elders in the Matemai clan so that we can guide them in the right path

Appendix 9 The socio-demographic profile of the households in the Nyamakate area

Household Socio-Demographic Data								
Household study ID	Household head	Age of Household Head	Number of people in Nuclear Family within Household	Number of people outside the nuclear Family living within Household	Average Age of Household Members	Predominant Income Generating Activity	Household Income per month (US$)	Skills level of Household Head
1	Mother	51	2	6	20	Agriculture, informal trading and remittances	300	Primary
2	Father	32	4	4	23	Agriculture	200	Never attended school
3	Father	54	5	3	22	Part-time contract work	20	Secondary
4	Father	38	5	-	17	Agriculture, part-time contract work	150	Secondary
5	Father	33	5	-	14	Agriculture, part-time contract work	120	Primary
6	Father	38	5	-	22	Builder, informal trade	175	Primary
7	Father	78	7	-	38	Agriculture	50	Primary
8	Father	55	6	-	26	Agriculture	60	Master Farmer Certificate
9	Father	69	9	-	38	Agriculture and traditional healer	-	Primary
10	Father	42	5	2	19	builder and agriculture	370	Secondary
11	Mother	57	6	1	26	Agriculture	30	Primary
12	Father	32	4	-	18	Salary and agriculture	250	Certificate in Electronics

13	Father	37	5	-	18	Agriculture and part-time contract work	180	Salesmen Certificate
14	Father	41	7	-	17	Agriculture and informal trading	-	Secondary
15	Father	63	7	1	23	Agriculture, pension and informal trading	310	Never attended school
16	Grandmother	59	1	5	17	Agriculture	-	Never attended school
17	Mother	53	4	4	21	Agriculture	-	Primary
18	Father	57	5	-	40	Agriculture	75	Primary
19	Father	64	3	1	38	Agriculture	-	Never attended school
20	Father	40	6	-	17	Agriculture	-	Primary
21	Father	78	8	5	28	Agriculture	180	Never attended school
22	Father	54	7	1	27	Agriculture	65	Trained Security Guard
23	Grandmother	74	1	3	41	Agriculture and midwifery	35	Trained in Midwifery
24	Grandfather	75	4	8	23	Agriculture	-	Catering certificate
25	Grandmother	90	7	1	34	Agriculture	40	Secondary
26	Grandmother	66	1	5	19	Agriculture	-	Never attended school
27	Father	33	5	3	15	Agriculture	-	Primary
28	Father	37	8	2	14	Agriculture and part-time contract work	65	Building certificate
29	Father	40	10	-	19	Agriculture and	180	Secondary

						informal trading		
30	Father	65	10	3	30	Agriculture	350	Catering certificate
31	Father	75	9	2	32	Agriculture	45	Primary
32	Mother	52	3	2	20	Agriculture and vegetable vending	-	Primary
33	Mother	66	6	2	21	Agriculture	30	Never attended school
34	Father	53	5	2	22	Agriculture	180	Primary
35	Father	40	6	1	25	Agriculture	300	Secondary
36	Grandmother	51	3	3	21	Agriculture	25	Never attended school
37	Father	31	3	-	18	Agriculture and arch welder	400	Certificate in arch-welding
38	Mother	68	3	11	19	Agriculture and part-time contract work	70	Never attended school
39	Father	33	6	-	14	Agriculture and part-time contract work	125	Primary
40	Father	51	5	2	36	Agriculture	800	Certified Electrician
Average		53	5	3	24		173	
Total			211	83				